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# MINERAL INDUSTRY SURVEYS



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## MOTOR GASOLINES, WINTER 1973-1974





# MOTOR GASOLINES, WINTER 1973-74

by

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## INTRODUCTION

The properties of motor fuels sold through service stations in the United States are reported in accordance with a cooperative agreement between the American Petroleum Institute and the Bureau of Mines of the United States Department of the Interior. By agreement with the American Petroleum Institute, identification of the data is confidential.

This report presents analytical data for 4,682 samples that represent the products of 53 companies. Company representatives collected the samples during December 1973 and January and February 1974. As in previous surveys, the gasolines covered by this survey include those from both large and small suppliers. Laboratories of various refiners, motor manufacturers, and chemical companies obtained and submitted the data to the Bureau of Mines for analysis and compilation. Motor-gasoline survey reports published since 1963, including this report, are listed on page 5.

Analytical tests required for a complete gasoline analysis were not available for many of the samples. Tests in this category, the number of test results available and used in this report, and the percent of the total samples represented for that test include the following:

<u>Test</u>	<u>Number of samples used</u>	<u>Percent of total samples</u>
Gravity	3,596	77
Sulfur content	1,356	29
Phosphorus	730	16
Lead content	3,534	75
Distillation	2,854	61
Vapor pressure	2,854	61

## SUMMARY

The characteristics of motor gasolines for winter 1973-74 are summarized in table 1, and for comparison, those for winter 1972-73 are shown in table 2. Trends of some of the more important characteristics for several years are shown in figures 1 and 2. The antiknock (octane) index  $[(R + M)/2]$  data since 1970 are included in this report for the first time with other related octane number trends.



The tabulated data below show trends of national average octane numbers for the last four gasoline surveys.

	Regular-price			Premium-price		
	Octane number			Octane number		
	Research	Motor	(R+M)/2	Research	Motor	(R+M)/2
Summer 1972	94.1	86.4	90.3	99.8	92.2	96.0
Winter 1972-73	93.9	86.4	90.2	99.6	92.2	95.9
Summer 1973	93.5	86.1	89.8	99.3	91.9	95.6
Winter 1973-74	93.4	86.0	89.7	99.1	91.7	95.4

This report also includes data for special gasoline type classifications as third grade (sub-regular), intermediate grade, and super-premium.

Table 6 lists all the low-lead gasolines (0.08-0.50 g/gal) within each district and table 7 gives the unleaded gasolines (0.00-0.07 g/gal). Tables 8, 9, and 10 give cumulative percents of samples of all grades by districts for the Research- and Motor-Method octane numbers and antiknock (octane) index respectively. Table 11 lists locations and number of samples represented in each district for all samples used in the preparation of this report.

## DISCUSSION OF DATA

Terms used in the surveys have the following meanings:

District: The designation of a marketing area for collecting samples and data. The present arrangement of 17 districts, developed by the CFR Committee 1/, was selected with reference to the specifications on motor gasolines, refinery locations, population centers, and arteries of commerce such as navigable rivers. The states or parts of states in each district are indicated in the headings of table 3 and are shown in figure 6.

Brand: The gasoline sold within a given price group and by a given trade name.

Item: The index number assigned to a given brand in a given district. The data for each item represent the average of those submitted for that brand in that district. The number of samples represented follows the item number.

Sample: The supply of gasoline obtained at the service station and analyzed in the laboratory.

1/ Coordinating Fuel and Equipment Research Committee (formerly the Coordinating Fuel Research Committee) of the Coordinating Research Council, Inc. From 1935 to 1948 the motor-gasoline surveys were conducted under a cooperative agreement between the Coordinating Research Council and the Bureau of Mines.



Table 3 presents the following data by districts: gravity in degrees API, sulfur, gum, phosphorus, lead, research- and motor-method octane numbers, the calculated property of the sum of research and motor octane numbers divided by two [antiknock (octane) index], Reid vapor pressure, calculated data for vapor-liquid ratio of 20, and distillation characteristics of the motor fuels collected. The tests were made according to American Society for Testing and Materials standards. <sup>2/</sup>

Corrosion test results are not included in the district tables as all the reported numbers are "1," according to the corrosion scale given in table 1 of ASTM D130. <sup>2/</sup>

Gum test data are reported to the nearest whole number. The distillation temperatures, corrected to barometric pressure at 760 mm Hg, are those for percent evaporated.

Average values follow the tabulated data in table 3 for the respective grades of fuel shown in each district. The averages of the various properties were computed without reference to the total number of samples represented by each item.

The district averages from table 3 are shown in table 4 with the number of brands and number of samples for regular- and premium-price gasoline in each district. The national averages for each of the properties of fuels sold in each of the 17 districts are given at the end of the table.

Table 5 shows data for third grade (sub-regular), intermediate grade, and super-premium motor gasolines. Tables 6 and 7 represent special listings of the samples according to lead content. Table 6 lists the low-lead samples (0.08-0.50 g/gal) and table 7 lists the unleaded samples (0.00-0.07 g/gal).

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<sup>2/</sup> American Society for Testing and Materials, 1973 Annual Book of ASTM Standards, Part 17, Petroleum Products — Fuels; Solvents; Burner Fuel Oils; Lubricating Oils, Cutting Oils; Lubricating Greases; Hydraulic Fluids, Philadelphia, Pa., 1,342 pp.



Figures 1 and 2 illustrate trends in the national averages of certain properties of regular- and premium-price gasolines, respectively, since the summer of 1946. This report presents, for the first time, trend data of the calculated antiknock index  $(R + M)/2$  since 1970. Averages for the winter surveys are plotted on the lines that represent the years and the summer survey data are plotted between the lines. Octane-number points are connected for successive surveys, but those for Reid vapor pressure and distillation temperatures are plotted separately for summer and winter surveys. Charts that show plots of these properties from 1935 (except winter 1941-42 and summer 1942) are presented in the survey report on motor gasolines for winter 1964-65 and preceding reports. 3/

Figures 3, 4, and 5 illustrate distribution (frequency) of octane values by numbers of samples for all grades of fuel represented. Each bar represents one-half octane number.

Tables 8, 9, and 10 show the percentages of all samples for each district at each whole octane number level, cumulated according to increasing octane number. Antiknock (octane) index data by cumulative percents are presented for the first time in this report in table 10 and figure 5.

The districts, locations, and number of samples of gasoline represented are listed in table 11 and shown on the map in figure 6. The locations are named for the principal cities in the respective vicinities, and include suburbs and adjacent communities. The area of the circle at each location is proportional to the number of samples obtained. The summary at the end of table 11 lists by district, the number of locations, samples, and the percentages of the latter based on the total reported.

This report does not discuss the significance of the data presented. Reference may be made to the ASTM specification 4/ for motor gasoline and its appendixes, "Significance of ASTM Specifications for Motor Gasoline," at a technical library.

- 
- 3/ Blade, O.C., Motor Gasolines, Winter 1964-65. Bureau of Mines Petroleum Products Survey, No. 40, 38 pp. (in cooperation with the American Petroleum Institute).
- 4/ American Society for Testing and Materials, Standard Specifications for Gasoline (D439): 1973 Annual Book of ASTM Standards, Part 17 (see footnote 2), pp. 169-181.



## LIST OF MOTOR-GASOLINE SURVEY REPORTS, 1963-73

<u>Author</u>	<u>Season and Year</u>	<u>PPS Report No.</u>	<u>Published</u>	<u>No. of Pages</u>
In cooperation with the American Petroleum Institute				
Blade, O. C.	Winter 1963-64	35	June 1964	40
Do.	Summer 1964	37	Dec. 1964	40
Do.	Winter 1964-65	40	July 1965	38
Do.	Summer 1965	43	Jan. 1966	39
Do.	Winter 1965-66	45	June 1966	38
Do.	Summer 1966	48	Dec. 1966	38
Do.	Winter 1966-67	50	June 1967	38
Do.	Summer 1967	53	Dec. 1967	38
Do.	Winter 1967-68	55	June 1968	39
Do.	Summer 1968	58	Jan. 1969	38
Do.	Winter 1968-69	60	July 1969	38
Blade, O.C. and Ella Mae Shelton	Summer 1969	63	Jan. 1970	38
Shelton, Ella Mae and C.M. McKinney	Winter 1969-70	66	Aug. 1970	47
Do.	Summer 1970	68	Jan. 1971	49
Do.	Winter 1970-71	70	June 1971	54
Shelton, Ella Mae	Summer 1971	73	Jan. 1972	59
Do.	Winter 1971-72	75	June 1972	53
Do.	Summer 1972	78	Jan. 1973	53
Do.	Winter 1972-73	80	June 1973	60
Do.	Summer 1973	83	Jan. 1974	59
Do.	Winter 1973-74	This report		

FIGURE 1.-Trends of Certain Characteristics of Regular-Price Gasolines.





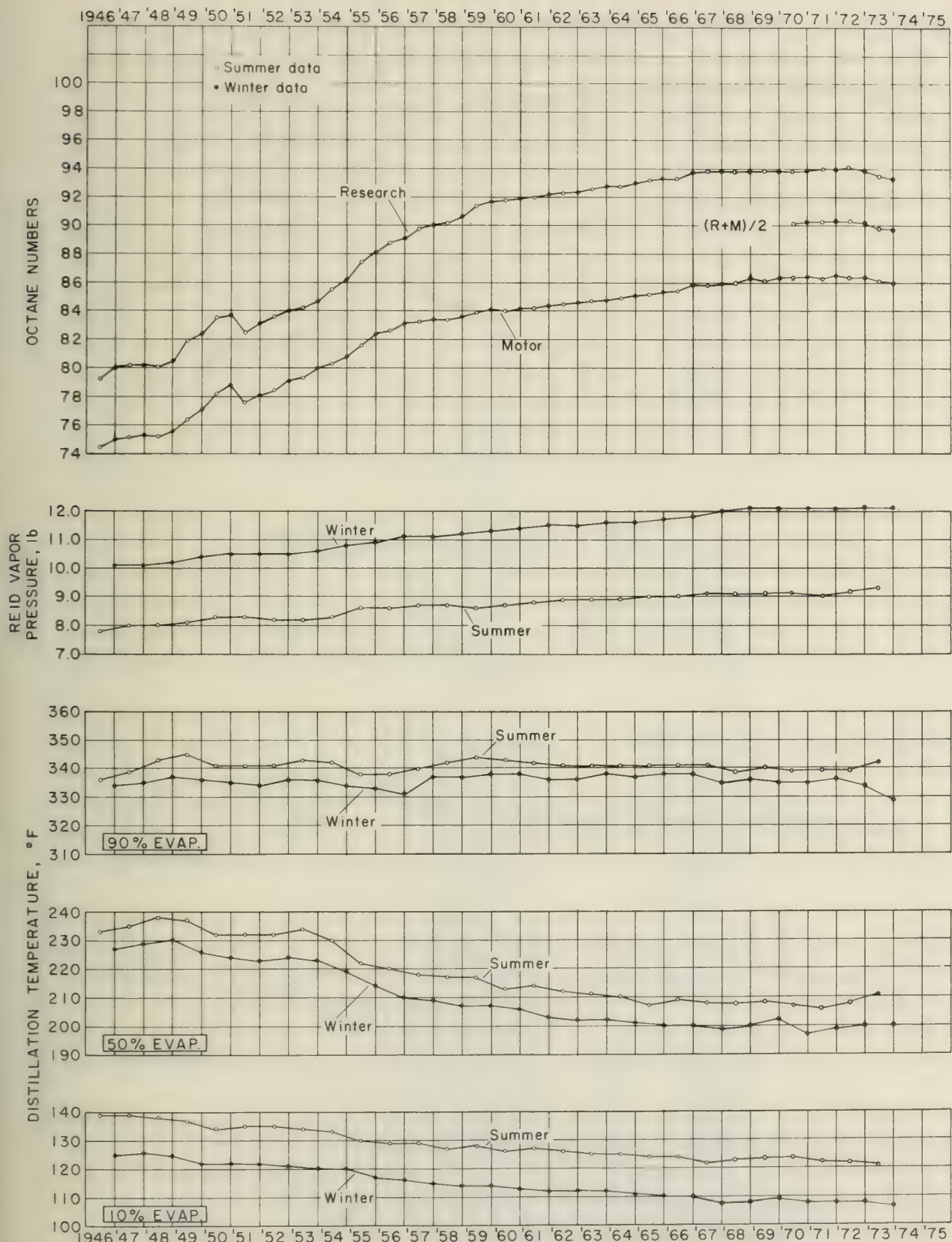


FIGURE 1.—Trends of Certain Characteristics of Regular-Price Gasolines.





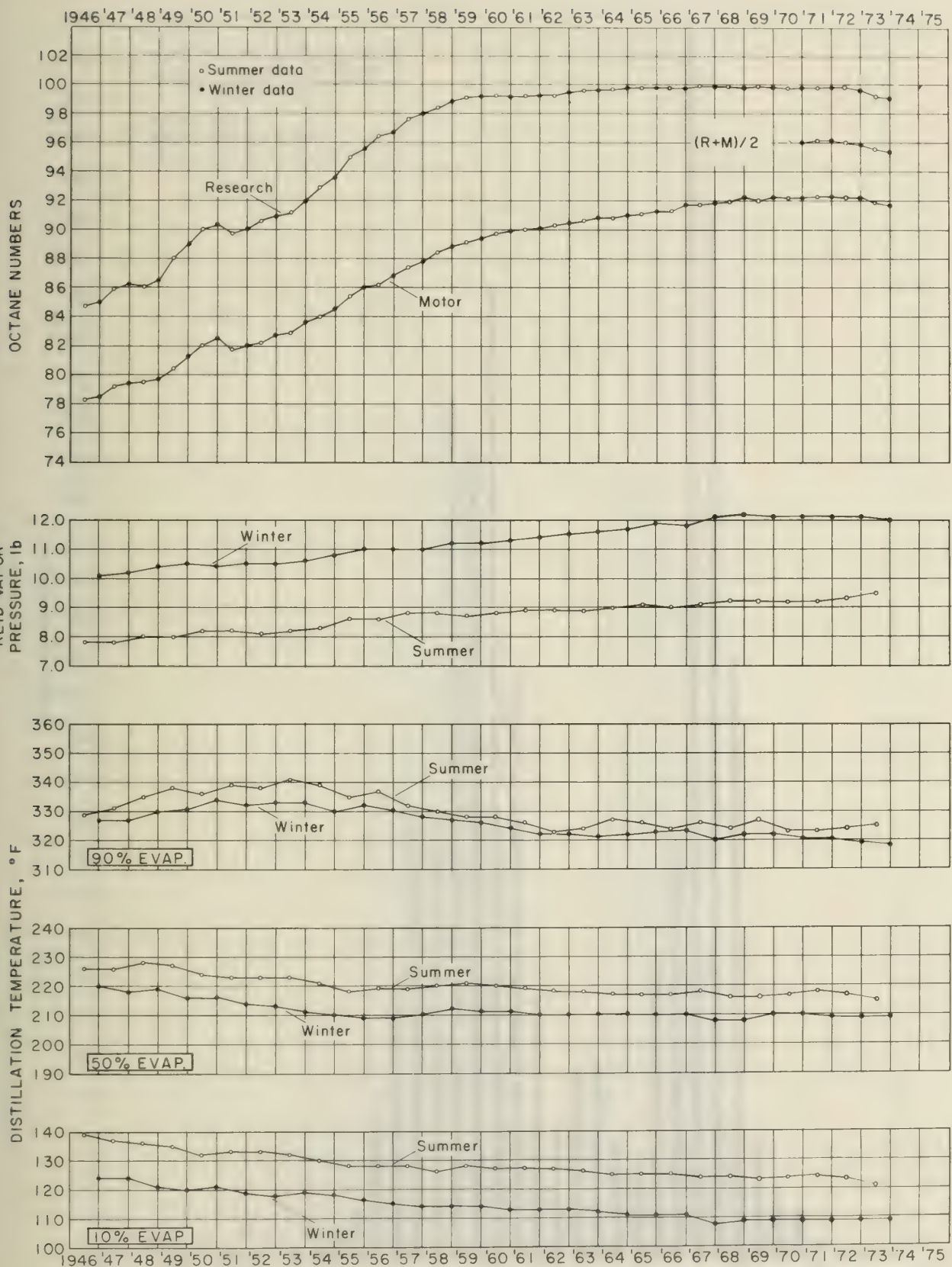


FIGURE 2.—Trends of Certain Characteristics of Premium-Price Gasolines.





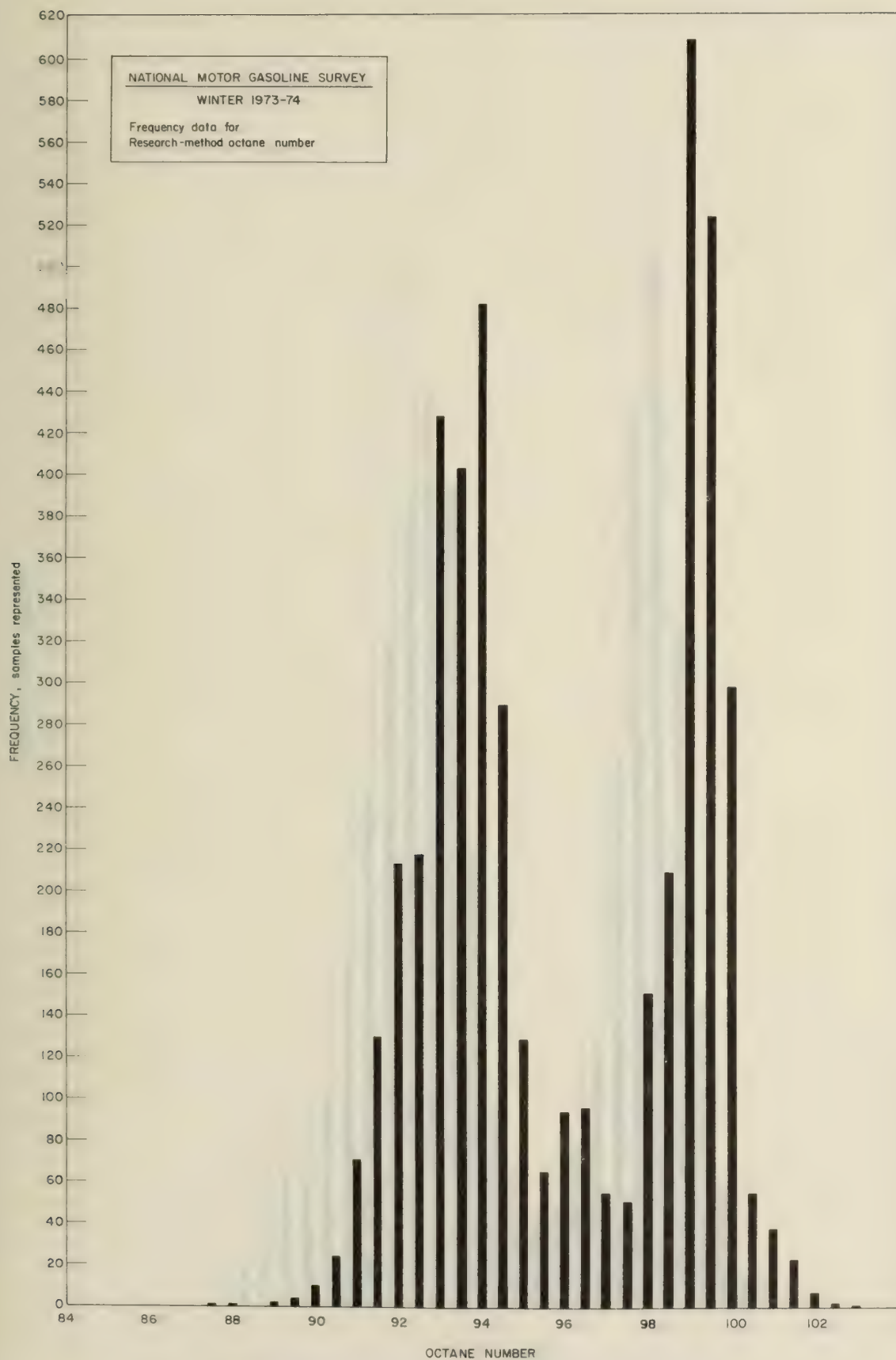


FIGURE 3.-Distribution of research-method octane numbers.





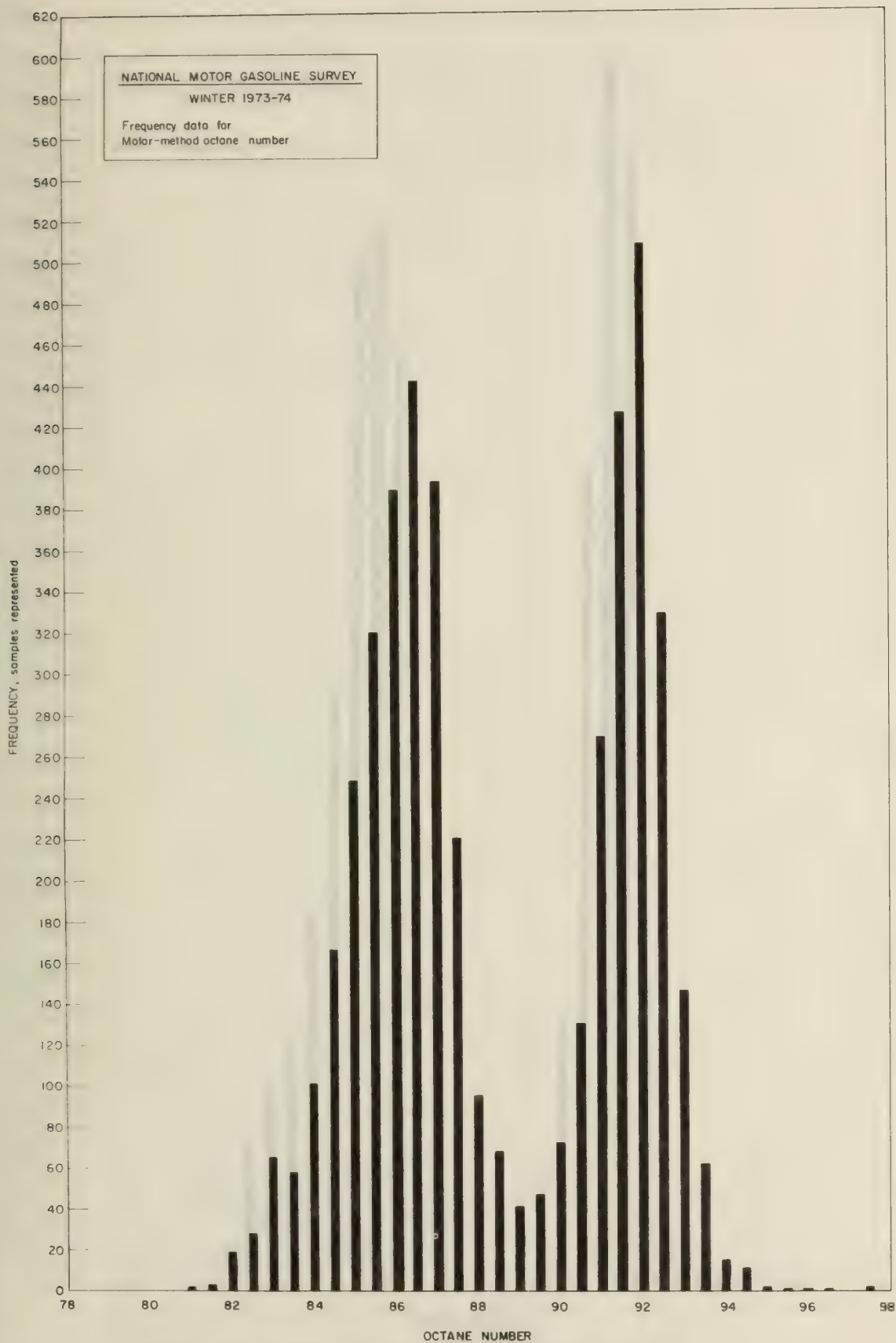


FIGURE 4.—Distribution of motor-method octane numbers.





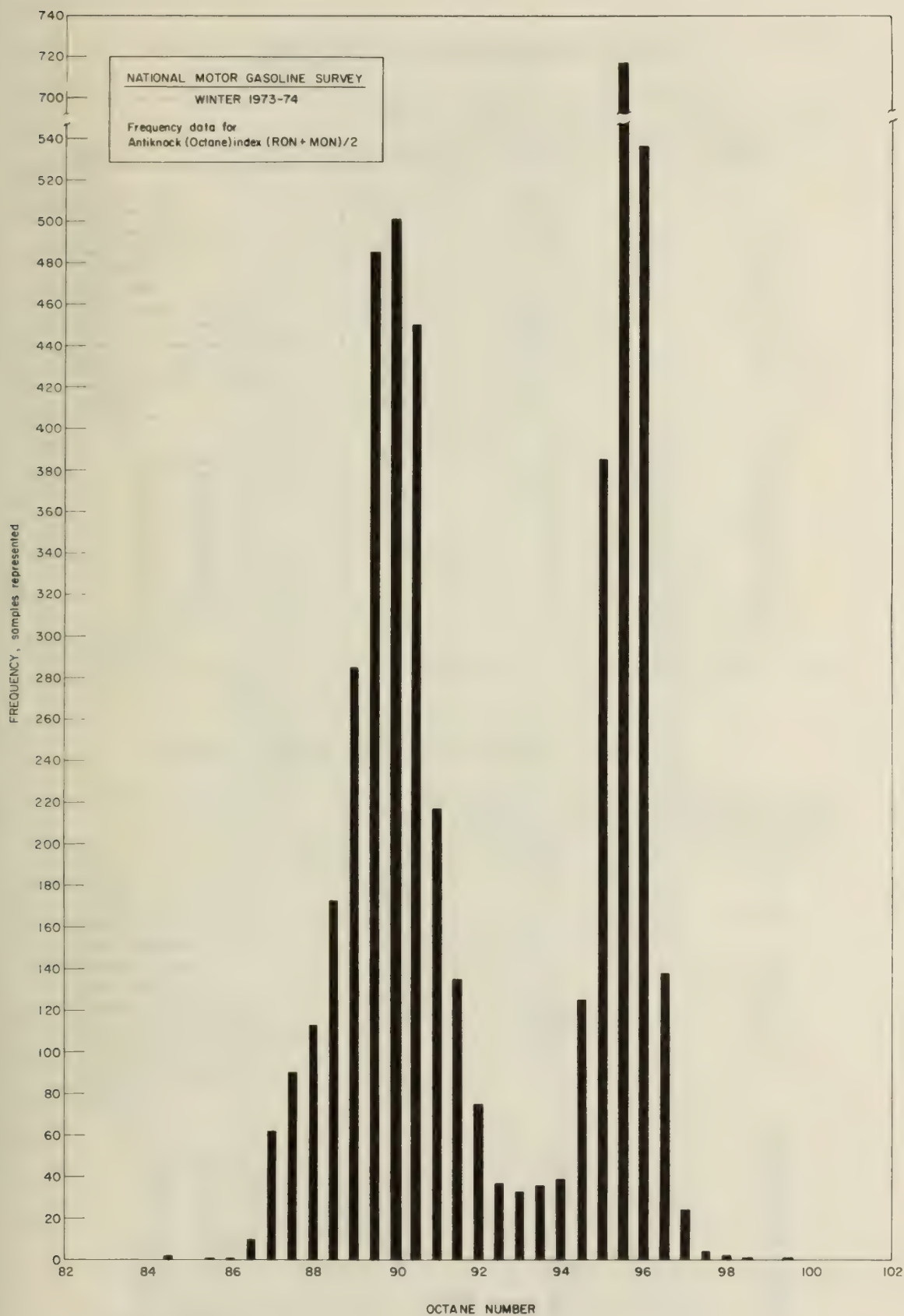


FIGURE 5.- Distribution of antiknock(octane) index  $(RON + MON)/2$ .





TABLE 1. - Summary of values, motor gasoline survey, winter 1973-74

Test	ASTM method	Regular-price gasoline	Premium-price gasoline
		Average	Average
Gravity, °API	D287	62.7	63.5
Corrosion, No.	D130	1	1
Sulfur content, wt %	D1266	0.038	0.025
Gum, mg/100 ml	D381	1	1
Phosphorus, g/gal	D3231	0.002	0.001
Lead, g/gal	D526	1.67	2.21
Octane number, Research	D2699	93.4	99.1
Octane number, Motor	D2700	86.0	91.7
(Research + motor octane Nos.)/2		89.7	95.4
Reid vapor pressure, lb	D323	12.1	12.0
Vapor-liquid ratio of 20, °F	D439	121	123
Distillation	D86		
Temp, °F			
IBP		84	84
5% evaporated		95	96
10% Do.		107	109
20% Do.		128	133
30% Do.		150	159
50% Do.		200	209
70% Do.		255	250
90% Do.		329	318
95% Do.		363	354
End point		404	399
Residue, vol %		1.0	1.0
Loss, vol %		2.1	2.2

TABLE 2. - Summary of values, motor gasoline survey, winter 1972-73

Test	ASTM method	Regular-price gasoline	Premium-price gasoline
		Average	Average
Gravity, °API	D287	62.5	63.0
Corrosion, No.	D130	1	1
Sulfur content, wt %	D1266	0.038	0.023
Gum, mg/100 ml	D381	1	1
Phosphorus, g/gal	D3231	0.013	0.016
Lead, g/gal	D526	1.80	2.34
Octane number, Research	D2699	93.9	99.6
Octane number, Motor	D2700	86.4	92.2
(Research + motor octane Nos.)/2		90.2	95.9
Reid vapor pressure, lb	D323	12.2	12.1
Vapor-liquid ratio of 20, °F	D439		
Distillation	D86		
Temp, °F			
IBP		84	84
5% evaporated		95	95
10% Do.		108	109
20% Do.		128	132
30% Do.		150	158
50% Do.		200	209
70% Do.		257	251
90% Do.		334	319
95% Do.		366	352
End point		405	397
Residue, vol %		1.0	0.9
Loss, vol %		2.1	2.2





TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 1 NORTHEAST--CONTINUED  
MAINE, MASS., N.H., VT., AND NORTHERN N.Y.

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER				RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES %	LOSS %
							RES, ASTM D2699	MOT., ASTM D2700	R+M --	TEMPERATURE, F (CORRECTED TO 760 MM HG)																
										PERCENT EVAPORATED																
										IBP			5	10	20	30	50	70	90	95	EP					
12	3	53.8	-	-	-	0.02	100.9	90.1	95.5	12.8	119	82	94	102	122	147	217	258	308	333	392	0.6	0.9			
13	3	62.2	-	-	-	2.41	99.2	92.3	95.8	12.2	120	82	93	103	124	148	206	260	319	344	398	.5	1.5			
14	4	61.0	0.040	1	-	2.41	99.3	91.8	95.6	12.8	121	82	94	106	133	162	215	259	330	348	404	.9	3.1			
15	7	66.7	-	-	-	1.49	99.4	91.2	95.3	14.5	110	80	87	98	114	134	192	232	290	325	378	1.3	2.8			
16	7	61.3	-	-	-	1.82	99.0	90.9	95.0	13.0	119	82	89	105	132	161	214	259	315	365	393	1.1	3.2			
17	3	60.2	-	-	-	1.93	99.7	92.3	96.0	12.7	119	75	86	97	123	161	220	270	328	368	406	.8	1.8			
18	9	61.5	.020	1	-	2.75	99.2	92.5	95.9	12.4	120	85	93	105	124	145	211	280	327	359	398	1.1	2.1			
19	3	59.6	-	-	-	2.94	99.6	91.3	95.5	12.6	120	82	92	106	131	159	210	256	309	334	390	.9	1.6			
20	2	62.8	-	-	-	1.77	99.5	91.8	95.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
21	7	59.5	-	-	-	2.62	100.9	91.9	96.4	11.9	123	89	97	114	135	157	204	253	322	359	408	1.2	2.8			
22	6	61.8	-	-	-	2.75	99.8	91.1	95.5	12.3	121	86	96	110	132	151	202	256	324	351	381	1.2	2.2			
23	3	63.7	-	-	-	2.44	99.2	91.6	95.4	13.0	116	84	92	101	124	147	198	245	305	328	380	.7	1.3			
AVERAGE		61.2	.030	1	-	2.11	99.6	91.6	95.6	12.7	119	83	92	104	127	152	208	257	316	347	393	.9	2.1			
SAMPLES	57																									

SAMPLES 57

TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74

AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 2 MID-ATLANTIC COAST

R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

## REGULAR-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER				RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES % X	LOSS % X	
							RES, ASTM D2699	MOT, ASTM D2700	R+M --- 2	TEMPERATURE, F (CORRECTED TO 760 MM HG)			PERCENT EVAPORATED												
										IBP			5	10	20	30	50	70	90	95	EP				
24	12	62.8	0.061	1	0.004	1.50	94.8	85.5	90.2	11.9	120	83	94	106	125	145	193	253	333	362	401	0.9	2.4		
25	19	63.1	.024	1	.004	1.86	94.0	87.4	90.7	12.2	119	83	94	106	127	147	194	247	320	354	397	1.0	2.7		
26	13	61.9	.045	1	.001	1.90	93.7	86.1	89.9	12.5	120	82	93	106	127	150	202	257	335	361	411	1.0	2.7		
27	8	62.2	.035	-	-	1.69	93.5	86.0	89.8	12.1	120	80	93	104	123	146	197	258	339	371	419	1.0	2.1		
28	23	66.1	.024	1	.003	1.71	93.6	87.2	90.4	13.4	114	81	87	102	121	143	190	247	330	349	394	1.0	3.4		
29	21	61.5	.021	2	.002	.85	93.3	85.7	89.5	12.5	122	83	91	106	129	157	216	284	356	383	417	1.2	3.5		
30	6	64.0	.025	-	-	1.58	94.7	87.4	91.1	12.7	116	83	94	103	120	140	188	251	322	350	388	1.0	2.2		
31	18	63.5	.025	1	.003	2.09	94.0	87.1	90.6	12.1	120	84	93	106	125	147	196	263	335	364	395	1.0	2.6		
32	26	64.1	.037	1	.002	1.51	93.9	86.6	90.3	12.6	119	83	92	104	124	146	200	258	328	362	403	1.0	2.7		
33	5	62.4	.060	1	.001	1.71	94.0	85.7	89.9	13.9	115	87	95	106	125	147	199	252	318	341	382	1.0	3.0		
34	18	61.9	.037	3	.003	1.43	94.3	86.7	90.5	13.3	116	80	88	101	122	146	206	275	356	388	425	1.1	3.2		
35	26	62.2	.022	1	.002	1.79	94.4	87.2	90.8	11.1	126	86	98	113	135	158	205	256	316	342	388	1.0	2.4		
36	7	64.0	.037	0	.001	3.01	94.3	88.3	91.3	12.6	117	84	93	106	124	144	194	258	324	345	386	1.1	2.2		
37	2	62.7	.044	-	-	1.33	93.8	85.6	89.7	12.6	119	82	96	107	126	148	203	272	347	388	418	1.4	1.6		
38	12	62.1	.047	2	.009	1.68	93.8	86.0	89.9	12.3	120	81	89	104	126	150	203	260	339	374	418	.7	2.8		
39	3	63.3	.037	-	-	1.72	93.4	86.2	89.8	12.1	119	81	95	105	124	144	193	255	338	376	410	1.1	1.9		
AVERAGE		63.0	.036	1	.003	1.71	94.0	86.5	90.3	12.5	119	83	93	105	125	147	199	259	334	363	403	1.0	2.6		
SAMPLES	219																								

SAMPLES 219



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED  
 DIST. 2 MID-ATLANTIC COAST--CONTINUED  
 R.I., CONN., N.J., DEL., MD., VA., CENTRAL AND SOUTHERN N.Y., AND EASTERN PA.

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	TEMPERATURE, F (CORRECTED TO 760 MM HG)										DISTILLATION, ASTM D86										RES LOSS %										
							RES, ASTM D2699	MOT, ASTM D2700	R+M ---			PERCENT EVAPORATED										PERCENT EVAPORATED																				
												IBP	5	10	20	30	50	70	90	95	EP	IBP	5	10	20	30	50	70	90	95	EP											
40	12	54.6	0.014	0	0.000	0.02	101.0	90.3	95.7	12.8	121	81	92	103	124	153	228	262	323	347	396	0.9	2.3																			
41	17	60.5	.012	1	.000	2.47	99.0	91.9	95.5	12.2	122	83	95	109	130	154	210	268	330	361	403	1.1	2.7																			
42	12	62.2	.028	1	.002	2.19	99.1	91.4	95.3	11.7	126	84	95	111	137	167	217	259	332	362	413	1.1	2.1																			
43	8	63.1	.031	-	-	2.16	98.9	91.5	95.2	13.1	120	84	94	106	131	160	216	257	332	378	410	.8	2.0																			
44	24	66.3	.018	1	.000	1.68	99.8	92.2	96.0	13.8	111	81	88	99	116	136	187	238	307	339	385	1.1	3.4																			
45	21	62.9	.013	1	.002	1.61	98.8	90.8	94.8	12.6	121	83	90	106	130	157	212	256	320	349	396	1.1	3.5																			
46	6	62.3	.015	-	-	2.14	98.7	91.2	95.0	12.4	121	83	94	105	127	152	212	257	321	353	407	.8	2.7																			
47	18	59.7	.013	0	.000	2.09	99.5	92.1	95.8	12.3	122	86	93	106	128	155	217	263	327	358	399	1.0	2.8																			
48	22	60.9	.019	1	.001	2.58	99.0	92.2	95.6	13.3	118	82	88	103	127	154	214	266	327	360	402	1.1	3.4																			
49	5	61.1	.024	1	.001	2.51	99.0	90.7	94.9	14.5	115	84	89	106	127	149	211	261	319	344	397	1.0	4.5																			
50	15	63.0	.023	1	.001	2.09	99.7	92.0	95.9	12.8	119	82	90	104	126	150	205	260	334	367	410	1.5	3.0																			
51	24	62.6	.014	1	.001	2.57	100.2	92.1	96.2	11.8	123	83	95	111	132	157	206	251	316	350	404	1.1	2.6																			
52	11	62.0	.036	1	.008	2.73	99.7	91.0	95.4	12.5	118	84	92	103	122	144	194	248	320	350	388	.8	2.6																			
53	3	62.3	.027	-	-	2.43	98.8	92.0	95.4	12.0	121	80	92	104	126	151	207	257	329	361	405	1.2	1.8																			
54	6	59.3	.028	0	.002	3.25	99.2	92.2	95.7	12.7	119	83	92	104	124	146	202	254	308	331	376	1.0	2.7																			
55	2	63.6	.023	-	-	1.97	98.9	91.4	95.2	12.3	122	82	94	106	131	163	217	257	331	371	414	1.2	2.3																			
56	10	63.4	.021	1	.004	2.24	98.9	91.4	95.2	12.9	118	81	90	102	124	152	206	248	324	360	407	1.0	4.1																			
AVERAGE		61.8	.021	1	.002	2.16	99.3	91.6	95.5	12.7	120	83	92	105	127	153	209	257	324	355	401	1.0	2.9																			
SAMPLES	216																																									



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

PREMIUM-PRICE GASOLINE																							
ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES X	LOSS X	
							RES, ASTM D2699	MOT., ASTM D2700			IR-M ---	TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
											IBP	5	10	20	30	50	70	90	95	EP			
75	4	61.7	0.019	-	-	2.33	99.0	91.7	95.4	11.1	128	85	101	111	135	161	221	273	334	368	405	1.0	0.8
76	24	53.7	.014	-	-	.02	101.6	90.6	96.1	11.9	126	84	95	108	133	165	233	265	325	348	385	1.1	1.9
77	4	61.2	.010	1	0.003	2.40	98.8	91.8	95.3	12.2	123	87	98	109	131	157	214	266	325	356	394	1.0	2.3
78	3	63.3	.018	-	-	2.32	99.1	91.5	95.3	11.9	123	84	95	107	131	158	209	250	327	362	418	1.0	1.3
79	8	62.7	.023	1	-	2.07	98.7	91.3	95.0	11.4	127	84	97	112	137	165	214	257	329	352	410	1.0	2.4
80	13	63.7	.014	1	.001	1.96	99.5	92.4	96.0	11.9	123	85	96	109	129	154	206	246	299	331	375	.9	1.8
81	25	63.3	.020	-	-	1.66	99.2	91.3	95.3	11.5	125	85	97	111	133	159	210	253	320	352	394	1.0	1.9
82	14	61.0	.023	-	-	2.49	99.1	91.7	95.4	10.5	128	85	99	110	129	149	209	282	322	343	385	.8	1.3
83	25	60.3	.010	1	.001	1.99	99.7	92.3	96.0	11.8	127	84	95	111	137	167	225	266	328	355	394	1.1	2.4
84	7	63.8	.017	1	.002	2.42	99.0	92.1	95.6	11.8	122	80	96	106	126	148	208	257	315	346	390	1.0	1.8
85	6	63.3	.028	-	-	2.31	99.1	91.3	95.2	11.9	123	81	95	107	131	156	209	253	325	363	408	.9	1.2
86	21	61.0	.018	-	-	2.60	99.2	91.9	95.6	10.6	131	86	100	117	141	166	215	269	341	371	412	1.1	2.0
87	3	61.6	.017	-	-	2.27	99.6	92.2	95.9	10.7	126	86	100	110	129	151	203	257	323	358	412	1.1	1.4
88	29	63.9	.014	1	.001	2.64	99.7	92.3	96.0	11.7	126	86	98	113	138	166	218	260	320	349	393	1.0	2.1
89	9	62.3	.012	-	-	2.11	99.0	91.8	95.4	10.9	126	83	93	107	130	154	212	258	325	355	403	.8	1.4
90	6	62.5	.033	-	-	2.91	99.5	92.1	95.8	10.9	128	85	100	112	135	159	213	267	339	376	416	1.2	.8
91	5	61.5	.007	-	-	2.51	99.2	91.8	95.5	10.3	128	84	100	111	130	151	203	251	314	342	380	.9	1.1
92	2	62.1	-	-	-	2.55	99.4	91.8	95.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AVERAGE	61.8	.017	-	1	.002	2.20	99.4	91.8	95.6	11.4	126	84	97	110	133	158	213	261	324	355	398	1.0	1.6
SAMPLES		208																					



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 4 APPALACHIAN  
 OHIO, W. VA., WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

REGULAR-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVF, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86																
							RES, ASTM D2699	MOT, ASTM D2700			R+M -- 2	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
												PERCENT EVAPORATED															
												IBP	5	10	20	30	50	70	90	95	EP	RES %	LOSS %				
93	9	63.1	0.041	2	0.010	2.35	94.5	86.4	90.5	118	81	91	103	124	146	194	248	328	367	416	0.9	2.3					
94	8	63.0	.043	2	.009	1.75	93.8	86.2	90.0	116	82	93	103	124	145	194	252	343	382	431	1.1	1.8					
95	13	62.5	.025	2	.006	1.87	94.1	86.6	90.4	115	82	90	103	124	146	195	252	332	366	415	.9	2.4					
96	3	62.2	-	-	-	1.30	93.5	86.4	90.0	114	80	92	102	121	138	185	239	314	349	394	1.1	1.9					
97	1	62.9	.029	2	.004	1.08	93.2	86.2	89.7	114	80	90	102	122	145	196	254	335	372	406	1.3	1.7					
98	1	62.1	.025	3	-	.89	93.8	85.7	89.8	115	78	92	103	124	149	208	268	341	375	433	1.2	2.8					
99	13	63.6	.028	1	.015	1.87	94.3	86.8	90.6	114	79	88	101	121	142	193	253	339	377	418	1.0	1.7					
100	18	63.2	.017	1	.017	1.26	93.7	86.4	90.1	115	80	89	102	122	145	194	249	329	369	418	.9	2.0					
101	1	67.9	.003	0	-	2.79	93.5	-	46.8	113	76	84	98	116	137	195	244	305	325	361	1.0	3.0					
102	7	62.0	.032	2	.023	1.02	93.5	86.0	89.8	114	78	88	100	124	150	205	259	334	366	413	.9	2.1					
103	9	63.7	-	-	-	-	94.3	86.5	90.4	117	84	94	103	119	138	191	256	335	369	408	1.0	2.2					
104	12	62.9	.024	2	.017	1.75	94.4	87.3	90.9	116	80	91	103	124	146	196	248	331	371	412	1.1	1.8					
105	18	62.8	.051	1	.009	1.41	93.3	85.9	89.6	115	82	90	104	123	145	195	252	328	363	407	1.0	2.3					
106	12	61.4	.023	2	.023	.64	94.2	85.8	90.0	116	79	90	104	129	155	209	261	331	361	403	.8	2.3					
107	14	62.7	.028	3	.005	1.39	94.4	86.6	90.5	112	79	88	99	120	145	197	257	347	383	425	1.2	2.7					
108	21	63.5	.021	1	.009	2.54	94.0	87.3	90.7	121	84	97	109	129	150	195	249	326	366	414	1.0	1.7					
109	7	61.6	.023	2	.021	.88	93.8	86.0	89.9	116	82	91	103	127	152	206	260	333	367	403	1.0	2.3					
AVERAGE		63.0	.028	2	.013	1.55	93.9	86.4	90.2	115	80	90	102	123	146	197	253	331	366	410	1.0	2.2					
SAMPLES		167																									

167

SAMPLES

**TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74**  
**AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED**

DIST. 4 APPALACHIAN--CONTINUED

WESTERN N.Y., WESTERN PA., EASTERN KY., AND PART OF MD.

# PREMIUM-PRICE GASOLINE

[illegible]





TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 5 MICHIGAN--CONTINUED

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS. ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES LOSS % X	
							RES, ASTM D2699	MOT, ASTM D2700	R+M --			TEMPERATURE, F (CORRECTED TO 760 MM HG)											
												PERCENT EVAPORATED											
												IBP	5	10	20	30	50	70	90	95	EP		
142	14	60.9	0.014	1	0.000	2.09	99.9	91.8	95.9	12.0	123	83	93	107	130	158	210	251	307	334	379	0.8	2.6
143	5	64.0	.021	1	.001	2.27	98.6	91.4	95.0	11.8	125	81	93	109	136	165	214	247	317	360	434	1.0	2.2
144	3	-	-	-	-	-	98.1	91.9	95.0	12.2	121	84	89	107	134	163	206	237	313	-	410	.9	3.4
145	3	62.7	.014	0	.000	2.31	98.8	91.8	95.3	11.6	124	81	96	110	134	158	207	251	323	363	419	1.0	1.3
146	10	66.7	.012	1	.000	1.82	99.2	92.8	96.0	13.3	118	81	88	102	129	163	212	244	321	359	407	1.0	3.9
147	13	67.1	.037	0	.000	1.85	99.1	93.9	96.5	14.0	118	78	84	104	138	178	218	249	325	364	406	.6	1.2
148	6	66.7	.024	1	.006	1.60	99.8	90.7	95.3	14.5	112	75	83	95	118	146	207	242	338	384	417	1.0	3.1
149	13	62.6	.009	2	.001	1.40	98.6	92.3	96.0	11.5	128	84	94	112	142	174	219	248	305	341	389	.9	2.8
150	14	69.4	.045	1	.001	1.01	98.1	91.4	94.8	12.5	121	83	90	106	132	163	206	233	304	346	401	.9	3.2
151	5	61.7	.008	1	.008	1.30	98.9	90.9	94.9	13.4	117	81	90	104	126	151	206	255	322	350	403	1.0	3.3
152	8	62.8	.014	2	.000	1.80	99.0	91.1	95.1	15.0	109	77	79	92	115	141	203	253	318	348	396	1.0	5.0
153	20	57.6	.008	0	.001	2.45	99.5	92.2	95.9	11.5	128	86	97	117	146	172	209	238	285	317	364	.8	2.8
154	5	66.0	.030	1	.007	1.59	99.0	91.1	95.1	13.4	116	79	88	102	125	153	203	242	318	355	403	.9	3.4
155	1	66.8	.043	1	.000	1.68	98.7	91.6	95.2	13.4	115	74	78	96	123	154	206	237	321	368	404	1.0	4.0
156	1	70.0	.063	1	.000	1.21	98.2	91.5	94.9	13.3	116	74	78	101	126	152	204	226	296	350	416	1.0	5.0
AVERAGE		64.6	.024	1	.002	1.74	99.0	91.8	95.4	12.9	119	80	88	104	130	159	209	244	314	353	403	.9	3.1
SAMPLES		121																					

SAMPLES 121



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 6 NORTH ILLINOIS--CONTINUED  
NORTHERN IND., NORTHERN ILL., EASTERN IOWA, AND WIS.

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES LOSS % %	
							RES, ASTM D2699	MOT., ASTM D2700			R+M --- 2	TEMPERATURE, F (CORRECTED TO 760 MM HG)												
												PERCENT EVAPORATED												
												IBP	5	10	20	30	50	70	90	95	EP			
169	7	60.9	0.017	0	0.000	1.93	99.9	92.1	96.0	12.4	120	83	90	104	127	153	206	243	306	337	389	0.9	2.9	
170	4	65.4	.013	1	.001	2.43	99.2	92.6	95.9	12.6	119	86	95	109	127	155	208	241	308	340	395	.9	2.8	
171	2	65.9	.049	-	-	1.81	98.5	91.7	95.1	12.3	124	78	96	113	139	170	213	241	320	374	414	1.1	2.4	
172	2	63.7	.008	-	-	2.59	99.0	92.9	96.0	12.6	120	80	95	110	134	156	198	231	310	354	400	1.0	3.0	
173	2	66.0	.015	-	-	2.22	98.9	92.5	95.7	13.2	117	76	90	102	131	160	204	234	309	347	388	1.0	3.0	
174	2	65.6	.042	-	-	1.38	98.5	92.2	95.4	12.0	124	78	95	110	138	170	210	239	313	362	400	1.0	3.0	
175	2	66.5	.001	3	.002	1.51	99.0	92.6	95.8	14.3	113	75	89	102	120	146	198	233	255	349	380	1.0	3.5	
176	4	66.5	.031	-	-	1.75	99.0	91.4	95.2	12.5	119	83	94	105	124	148	201	237	311	351	399	.8	1.7	
177	7	61.8	.013	1	.002	1.72	99.6	92.5	96.1	12.2	123	83	92	107	135	166	215	245	302	337	390	1.0	2.7	
178	9	67.5	.038	1	.001	1.49	98.1	91.8	95.0	13.5	117	82	89	103	130	160	204	229	296	353	398	.9	3.7	
179	7	56.2	.013	0	.000	2.47	99.6	92.2	95.9	11.8	127	85	97	118	147	174	211	241	286	312	359	.9	3.0	
180	2	65.2	.030	-	-	2.12	98.8	92.6	95.7	13.7	118	84	96	107	38	165	211	242	307	345	404	1.1	1.9	
AVERAGE		64.3	.023	1	.001	1.95	99.0	92.3	95.7	12.8	120	81	93	108	133	160	207	238	302	347	393	1.0	2.8	
SAMPLES		50																						







TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 8 LOWER MISSISSIPPI  
MISS., LA., EASTERN AND SOUTHERN ARK., AND WESTERN TENN.

REGULAR-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES LOSS % %
							RES, ASTM D2699	MOT., ASTM D2700	R+M --			TEMPERATURE, F (CORRECTED TO 760 MM HG)		PERCENT EVAPORATED										
												IBP											EP	
													5	10	20	30	50	70	90	95				
224	10	63.4	0.032	-	-	2.45	94.7	86.6	90.7	12.2	120	83	96	108	129	152	199	258	340	378	414	0.9	1.7	
225	1	64.0	.034	-	-	1.92	93.8	86.4	90.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
226	3	63.5	.043	-	-	2.36	93.0	86.4	89.7	14.4	113	80	92	104	124	149	196	247	343	383	420	1.0	1.0	
227	15	65.8	.036	1	0.000	2.05	93.2	87.6	90.4	13.4	115	85	96	105	124	147	197	259	341	383	408	1.0	2.0	
228	3	62.9	.058	-	-	2.00	93.7	86.0	89.9	12.3	120	80	93	105	125	149	202	265	348	388	424	1.2	1.3	
229	6	64.0	.048	1	-	1.98	93.7	86.8	90.3	12.4	120	82	99	107	128	149	199	255	331	346	409	.9	1.8	
230	4	-	-	-	-	-	94.6	87.6	91.1	12.7	121	85	97	110	133	160	210	266	350	378	406	1.0	1.4	
231	13	64.2	.027	-	-	1.70	93.9	87.0	90.5	12.8	117	83	96	107	126	146	192	249	310	335	379	1.0	1.0	
232	14	62.0	.043	-	-	1.59	93.4	86.5	90.0	11.5	125	85	98	110	131	156	207	259	330	357	407	1.0	1.6	
233	10	64.7	.048	0	-	1.92	93.6	86.7	90.2	12.4	119	85	97	109	130	150	194	246	316	342	410	1.0	1.7	
234	3	65.1	-	-	-	-	94.4	87.5	91.0	12.0	120	86	99	109	126	146	192	247	324	361	405	.6	1.8	
235	14	62.5	.024	-	-	2.02	94.0	86.9	90.5	12.8	119	80	94	105	128	156	206	265	346	376	413	.9	1.5	
236	13	63.9	.043	-	-	2.15	93.8	86.5	90.2	12.3	121	84	98	109	131	155	203	266	335	363	395	.9	1.2	
237	8	62.6	.024	-	-	1.48	93.8	86.4	90.1	10.6	127	86	100	113	132	153	199	253	322	359	405	.6	1.2	
238	3	62.5	.076	-	-	2.73	94.4	85.9	90.2	12.3	123	84	100	112	134	158	210	267	355	388	420	.6	.9	
239	14	63.7	.034	-	-	2.42	94.3	87.1	90.7	11.7	122	83	99	110	129	152	197	242	307	333	385	.9	1.3	
240	3	63.1	.075	-	-	1.54	93.8	86.2	90.0	13.0	118	82	96	108	126	148	199	257	316	349	406	.6	.9	
241	2	65.7	.013	-	-	2.11	93.1	87.4	90.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AVERAGE	139	63.7	.041	1	.000	2.03	93.8	86.8	90.3	12.4	120	83	97	108	129	152	200	256	332	364	407	.9	1.4	

SAMPLES























TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 12 SOUTH TEXAS--CONTINUED

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS. ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES LOSS			
							RES, ASTM D2699	MOT, ASTM D2700			R+M --- 2	TEMPERATURE, F (CORRECTED TO 760 MM HG)														
												PERCENT EVAPORATED												EP	RES %	LOSS %
												IBP	5	10	20	30	50	70	90	95						
												371	8	60.6	0.023	1	0.000	3.00	99.3	92.5	95.9	10.9	126	87	101	111
372	3	62.5	-	-	-	2.64	99.1	92.2	95.7	12.0	120	80	92	105	124	148	201	244	334	369	416	1.0	1.5			
373	8	61.5	.017	-	-	2.45	98.5	91.3	94.9	10.1	133	87	104	118	143	169	216	263	334	366	406	1.0	1.7			
374	3	62.1	-	-	-	2.51	99.1	92.1	95.6	10.2	134	90	103	120	148	176	216	254	333	383	407	1.0	2.0			
375	3	65.0	-	-	-	3.05	99.5	91.7	95.6	12.7	118	86	97	107	127	148	196	231	310	346	386	1.0	2.0			
376	3	62.5	-	-	-	3.53	98.6	89.1	93.9	8.9	135	95	112	123	138	152	192	245	315	342	366	1.0	1.0			
377	11	66.3	.014	0	.000	1.60	99.4	93.1	96.3	11.6	121	86	98	110	126	145	188	228	278	306	350	1.0	1.7			
378	11	63.5	.017	0	.000	2.34	99.3	91.7	95.5	11.9	122	85	98	110	131	154	202	243	300	332	383	1.0	1.4			
379	7	67.1	-	-	-	1.83	99.3	92.9	96.1	11.5	122	85	98	108	123	140	199	245	303	334	391	1.0	1.1			
380	5	63.8	.019	-	-	2.74	99.0	92.5	95.8	11.8	122	83	92	104	127	152	204	249	326	378	411	.9	2.2			
381	4	59.3	.005	0	.000	2.13	99.7	92.3	96.0	11.5	124	88	94	108	129	155	209	249	320	352	383	1.0	2.6			
382	3	66.8	-	-	-	3.08	99.6	91.6	95.6	12.9	115	82	92	102	122	145	191	233	308	346	376	.9	2.1			
383	11	62.5	.017	1	-	2.52	99.2	93.0	96.1	12.1	121	84	96	107	125	147	209	267	314	340	391	1.0	1.5			
384	11	60.6	.017	0	.000	2.95	99.6	92.0	95.8	11.3	128	85	98	113	140	169	219	260	313	344	381	1.0	1.7			
AVERAGE		63.2	.016	0	.000	2.60	99.2	92.0	95.6	11.4	124	86	98	110	131	153	203	248	316	350	389	1.0	1.7			
SAMPLES	91																									



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED  
 DIST. 13 SOUTH MT. STATES  
 SW KANS., OKLA. AND TEX. PANHANDLES, W. TEX., N. MEX., COLO., UTAH, ARIZ., NEV., AND E. CALIF.

## REGULAR-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS. ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES LOSS				
							RES, ASTM D2699	MOT, ASTM D2700			R+M --2	TEMPERATURE, F (CORRECTED TO 760 MM HG)		PERCENT EVAPORATED												EP	RES %	LOSS %
												IBP	PERCENT EVAPORATED															
													5	10	20	30	50	70	90	95								
385	6	62.9	0.024	-	-	1.05	92.2	84.0	88.1	10.2	128	88	101	112	133	153	198	255	330	360	395	1.0	1.5					
386	8	62.6	.020	-	-	1.56	91.7	84.2	88.0	12.5	122	87	99	113	136	161	209	258	329	352	393	.9	2.6					
387	18	60.8	.037	0	0.000	1.68	92.4	84.8	88.6	11.2	125	84	96	110	132	155	202	258	341	372	416	1.0	2.8					
388	3	63.8	.060	-	-	1.32	90.7	83.5	87.1	11.5	122	86	100	107	124	143	196	264	364	415	511	1.2	1.8					
389	6	-	-	-	-	-	92.4	85.2	88.8	12.1	124	89	101	117	139	160	205	259	359	380	413	1.0	2.3					
390	24	62.5	.043	1	.000	1.63	91.9	85.6	88.8	11.4	124	88	99	111	130	152	199	252	338	381	410	.9	1.7					
391	14	61.5	.064	1	.000	1.61	92.9	85.3	89.1	10.7	128	87	100	114	135	158	206	264	330	375	411	1.0	1.7					
392	3	61.9	.053	-	-	1.50	90.8	84.2	87.5	11.2	125	84	101	111	130	151	202	260	338	380	450	1.0	2.0					
393	23	66.8	.086	-	.001	1.26	92.0	84.9	88.5	11.6	120	86	100	111	126	143	183	235	326	369	401	1.0	1.6					
394	13	66.7	.018	-	-	1.68	91.6	86.5	89.1	11.8	121	86	99	109	128	148	193	242	336	381	408	1.0	1.6					
395	16	60.1	.093	0	.000	1.51	92.3	85.1	88.7	11.4	126	87	99	112	136	160	210	266	348	378	408	1.0	1.7					
396	3	62.9	.026	-	-	1.29	91.2	85.0	88.1	10.6	127	83	98	110	131	155	205	257	337	382	430	.9	2.6					
397	22	63.2	.067	2	.000	1.60	92.2	85.8	89.0	11.4	124	85	99	111	132	155	203	254	333	375	412	1.1	2.1					
398	27	62.2	.035	1	.000	1.22	92.5	84.7	88.6	11.7	124	87	98	113	134	156	202	255	334	367	403	1.0	2.4					
399	42	62.2	.050	5	.000	1.81	92.9	85.4	89.2	10.6	130	89	102	116	138	162	209	260	328	361	393	1.2	1.8					
400	15	61.4	.032	0	.000	1.39	92.5	85.0	88.8	11.4	126	86	96	111	133	158	212	269	335	364	409	1.0	2.9					
401	1	62.6	.032	0	.014	3.65	89.2	85.6	87.4	8.1	142	98	121	137	153	166	193	228	294	314	370	.8	1.2					
402	3	62.4	.020	-	-	1.16	90.0	84.1	87.1	10.7	128	86	103	114	134	155	205	260	337	368	410	1.0	2.0					
AVERAGE		62.7	.045	1	.002	1.58	91.7	84.9	88.3	11.1	126	87	101	113	134	155	202	255	335	371	414	1.0	2.0					
SAMPLES																												



TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
 AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 14 NORTH MT. STATES  
 WYO., MONT., IDAHO, EASTERN WASH., AND EASTERN OREG.

REGULAR-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	TEMPERATURE, F (CORRECTED TO 760 MM HG)												RES LOSS % X		
							RES, ASTM D2699	MOT, ASTM D2700			R+M --	PERCENT EVAPORATED													
												IBP	5	10	20	30	50	70	90	95	EP				
421	11	63.6	0.034	2	0.001	1.42	94.3	84.9	89.6	117	77	91	102	123	145	194	246	324	362	390	1.9	3.0			
422	7	64.1	.036	1	.001	1.73	92.5	85.8	89.2	118	82	94	104	121	142	190	242	320	358	408	1.6	3.1			
423	13	64.4	.041	0	.001	1.81	92.9	86.5	89.7	119	81	92	106	126	149	197	246	328	363	401	1.3	2.5			
424	9	63.3	.068	1	.000	1.29	93.9	84.4	89.2	115	85	96	106	123	143	187	245	329	359	390	1.1	2.7			
425	6	63.3	.041	-	-	1.46	92.7	85.5	89.1	126	87	101	112	134	158	203	248	326	358	396	1.0	2.3			
426	11	63.2	.102	1	-	1.93	92.3	85.6	89.0	11.9	123	83	93	110	132	156	205	255	339	376	409	1.4	2.5		
427	20	63.2	.038	1	.002	1.76	92.3	85.2	88.8	12.3	120	83	95	107	128	151	200	253	333	370	408	1.4	2.7		
428	9	62.9	.034	1	.001	1.44	94.5	85.3	89.9	12.3	118	79	91	101	122	144	193	251	328	357	396	1.9	3.1		
429	9	62.9	.025	1	.001	1.86	91.5	85.7	88.6	11.7	122	82	96	107	128	150	198	249	321	352	401	1.8	2.6		
430	11	65.3	.021	2	.001	1.45	93.2	86.2	89.7	12.3	119	83	94	106	126	147	193	240	305	334	368	1.7	2.7		
431	14	63.7	.041	0	.001	1.46	93.7	84.7	89.2	12.8	117	84	93	106	126	148	194	247	325	352	388	1.0	3.0		
432	10	64.1	.039	0	.001	1.64	92.6	85.8	89.2	11.9	120	84	96	107	126	147	193	245	321	358	407	1.6	2.7		
433	1	62.3	.020	0	-	1.34	92.5	86.3	89.4	13.2	119	78	92	104	131	161	218	273	343	372	412	4.0	3.0		
434	3	63.8	.041	-	-	1.69	93.8	86.3	90.1	13.4	115	84	96	105	125	147	190	238	314	350	404	1.0	3.0		
AVERAGE		63.6	.042	1	.001	1.59	93.1	85.6	89.4	12.4	119	82	94	106	127	149	197	248	325	359	398	1.6	2.8		
SAMPLES	134																								

134



















TABLE 3. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
AVERAGE DATA FOR DIFFERENT BRANDS--CONTINUED

DIST. 17 SOUTH CALIFORNIA--CONTINUED

PREMIUM-PRICE GASOLINE

ITEM	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER				RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											
							RES, ASTM D2699	MOT, ASTM D2700	R+M				TEMPERATURE, F (CORRECTED TO 760 MM HG)										RES LOSS % X	
									--	--			PERCENT EVAPORATED											
													IBP	5	10	20	30	50	70	90	95	EP		
499	10	59.7	0.041	2	0.001	2.68	98.9	91.2	95.1	12.4	122	84	95	108	130	156	214	266	325	352	396	1.1	3.1	
500	3	52.1	--	--	--	1.86	98.6	89.5	94.1	10.8	142	86	113	136	176	209	250	285	328	359	413	1.2	2.8	
501	5	61.7	.033	1	.000	2.09	98.8	91.7	95.3	11.5	125	84	97	110	135	161	212	255	323	363	411	1.1	2.6	
502	9	60.8	.023	0	.000	2.30	98.6	91.5	95.1	11.9	125	83	90	109	139	169	218	262	328	356	403	1.1	4.1	
503	7	61.6	.034	2	.001	2.45	99.1	91.4	95.3	11.4	126	87	97	111	136	160	210	247	312	344	391	1.1	2.7	
504	3	56.6	--	--	--	2.95	99.0	90.5	94.8	11.9	127	84	101	117	147	176	219	264	339	382	418	1.2	2.8	
505	12	59.8	.036	3	.000	2.53	99.8	91.3	95.6	10.9	130	89	99	117	143	173	217	257	314	354	393	1.1	2.9	
506	11	57.0	.080	2	.000	2.22	99.7	90.2	95.0	11.0	131	86	102	117	145	172	220	268	338	378	423	1.1	2.2	
507	12	63.9	.060	3	.000	2.54	98.9	90.4	94.7	11.8	121	86	94	108	125	144	191	241	295	328	380	1.1	2.4	
508	12	60.7	.032	1	.000	3.01	99.2	91.4	95.3	10.6	130	88	102	116	139	164	214	268	324	355	393	1.0	1.9	
509	10	58.3	.015	1	.000	1.69	97.9	90.8	94.4	11.7	126	84	95	110	137	166	218	255	321	367	415	1.1	3.2	
AVERAGE		59.3	.039	2	.000	2.39	99.0	90.9	95.0	11.4	128	86	99	114	141	168	217	261	322	358	403	1.1	2.8	
SAMPLES																							94	







TABLE 5. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
DATA FOR SOME ADDITIONAL GRADES

THIRD-GRADE GASOLINE

DISTRICT AND ITEM NUMBERS	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86																RES LOSS %	X	
							RES, ASTM D2699	MOT., ASTM D2700			R+M ---	TEMPERATURE, F (CORRECTED TO 760 MM HG)																	
												PERCENT EVAPORATED																	
												IBP	5	10	20	30	50	70	90	95	EP								
1 510	1	59.3	-	-	-	0.57	95.2	85.7	90.5	7.5	147	100	-	130	150	-	208	-	300	-	382	1.0	2.0						
1 511	4	61.9	0.010	1	-	.38	94.3	88.1	91.2	12.7	119	83	88	101	121	145	218	271	315	343	402	1.0	1.8						
1 512	1	62.2	-	-	-	.48	96.4	87.5	92.0	12.3	119	80	-	104	122	-	198	-	312	-	382	1.0	2.0						
1 513	2	58.5	-	-	-	.33	91.6	83.3	87.5	12.6	122	80	-	97	127	-	235	-	360	-	419	1.0	3.0						
1 514	1	66.7	-	-	-	.42	95.4	87.6	91.5	15.0	106	75	-	90	107	-	187	-	335	-	387	1.0	4.0						
1 515	1	58.7	-	-	-	.01	91.9	84.7	88.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1 516	3	61.4	-	-	-	.03	94.6	83.1	88.9	12.6	121	83	95	107	130	154	210	265	334	373	395	.8	2.2						
2 517	5	59.5	.019	1	0.003	.87	93.8	84.5	89.2	11.0	131	91	102	116	141	170	224	262	313	338	392	1.2	2.1						
2 518	3	60.7	.055	2	.003	1.53	93.0	85.5	89.3	13.8	114	79	85	97	118	142	205	281	362	392	429	.7	4.3						
2 519	8	59.2	.013	1	.001	.65	94.3	86.8	90.6	12.7	121	81	92	101	126	157	222	268	326	364	413	1.1	2.9						
2 520	1	61.5	.010	0	.003	.36	96.6	87.0	91.8	12.1	117	94	95	103	117	134	185	240	297	324	380	.8	2.2						
2 521	7	60.6	.036	1	.001	.88	91.7	83.6	87.7	11.4	126	85	96	107	130	155	221	287	349	378	415	1.3	1.8						
2 522	5	57.6	.014	1	.001	.05	92.0	83.9	88.0	9.7	132	90	103	115	132	154	210	288	341	365	423	1.0	2.0						
2 523	10	58.9	.039	1	.002	.09	95.3	84.3	89.8	11.3	125	88	98	109	130	154	212	270	336	361	406	1.1	2.3						
3 524	10	58.6	.018	-	-	.03	94.8	83.7	89.3	11.5	122	84	97	107	128	149	196	269	336	360	400	1.0	1.4						
3 525	3	64.0	.037	-	-	.02	92.0	84.2	88.1	11.7	125	84	96	107	136	170	214	252	324	372	414	1.2	1.3						
3 526	4	61.6	.024	-	-	.28	91.9	84.5	88.2	11.5	125	84	97	108	131	158	213	276	354	375	400	1.0	1.0						
3 527	1	61.3	-	-	-	.49	96.4	88.0	92.2	10.6	127	90	-	116	132	-	200	-	308	-	376	1.0	3.0						
3 528	1	59.6	-	-	-	.45	94.4	86.7	90.6	9.6	131	80	93	103	125	148	218	263	301	332	388	.6	1.4						
3 529	10	59.0	.024	-	-	.05	92.3	82.8	87.6	8.7	141	93	111	125	149	169	214	258	333	365	427	1.0	1.8						
3 530	6	59.5	.017	8	.001	.19	94.0	85.2	89.6	12.4	124	82	97	109	136	166	221	260	312	337	376	1.4	1.4						
4 531	2	57.4	.026	4	.008	.02	94.3	83.4	88.9	9.6	132	85	100	114	136	156	202	276	338	360	406	.3	2.7						
4 532	5	58.6	.006	-	-	.24	92.1	84.1	88.1	12.3	120	85	97	108	126	145	195	268	333	366	413	1.0	1.5						
4 533	1	61.1	.011	2	-	.02	91.8	82.9	87.4	12.1	123	85	102	112	131	152	208	263	325	356	408	1.0	1.7						



TABLE 5. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

THIRD-GRADE GASOLINE--CONTINUED

DISTRICT AND ITEM NUMBERS	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86													RES %	LOSS %
							RES, ASTM D2699	MOT, ASTM D2700			R+M --=	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
												PERCENT EVAPORATED													
												5	10	20	30	50	70	90	95	EP					
7 558	2	60.9	.012	-	-	.27	93.5	85.6	89.6	11.2	127	83	94	106	133	161	219	268	313	331	364	1.1	.9		
8 559	6	59.6	.026	-	-	.03	93.4	83.1	88.3	10.4	127	86	94	111	132	148	198	266	333	365	406	1.0	2.0		
8 560	5	63.1	.037	-	-	1.80	93.8	86.4	90.1	12.8	117	84	91	101	124	154	199	253	344	378	418	.9	2.1		
8 561	6	61.3	.036	-	-	.29	91.3	84.2	87.8	11.2	125	83	-	106	129	-	213	-	342	-	409	1.0	3.0		
8 562	1	61.7	-	-	-	.50	96.5	87.0	91.8	10.9	125	70	-	107	127	-	203	-	315	-	387	1.0	2.0		
8 563	2	61.4	-	-	-	.26	91.5	84.2	87.9	10.6	128	86	-	114	134	-	202	-	346	-	437	1.0	2.3		
8 564	6	59.6	.018	-	-	.32	93.9	85.4	89.7	12.2	128	89	100	116	146	182	229	263	314	332	388	.9	1.6		
9 565	3	66.5	.013	-	-	.01	91.7	82.9	87.3	12.5	120	84	102	112	134	158	198	230	286	312	388	.6	.9		
9 566	3	64.1	.049	-	-	1.63	92.2	84.5	88.4	11.3	122	86	98	108	126	146	192	241	314	349	396	.5	1.0		
10 567	3	69.6	.019	-	-	.36	92.4	89.4	90.9	13.0	119	86	92	102	132	165	211	235	296	322	390	.9	2.1		
10 568	8	64.1	.033	-	-	1.37	92.5	85.4	89.0	11.4	123	84	99	111	128	148	193	243	321	358	406	.9	1.4		
10 569	6	61.0	.052	-	-	.09	91.5	83.2	87.4	10.8	130	84	99	114	141	163	213	246	297	328	373	1.0	1.3		
11 570	6	63.0	.021	-	-	1.89	92.6	86.0	89.3	12.2	119	85	96	109	129	151	187	243	321	362	406	1.0	.8		
11 571	3	63.3	-	-	-	.24	91.7	84.2	88.0	11.2	124	84	96	110	129	148	200	250	318	352	398	1.2	.8		
11 572	3	60.5	-	-	-	.38	94.2	87.6	90.9	11.2	128	86	98	110	137	168	222	263	301	332	392	1.2	.8		
11 573	6	62.2	.013	-	-	.44	93.7	86.0	89.9	11.4	129	86	100	114	142	170	218	250	298	324	375	1.1	.9		
12 574	2	63.2	.041	1	.000	.54	91.5	85.1	88.3	8.5	140	97	115	128	145	162	207	241	326	370	415	1.0	1.0		
12 575	3	61.5	-	-	-	1.81	93.4	86.3	89.9	12.4	121	86	98	108	128	151	205	281	332	357	394	1.0	1.0		
12 576	1	65.9	.015	0	.001	.45	94.6	87.4	91.0	11.0	122	83	97	108	124	141	185	223	259	283	337	1.0	1.0		
12 577	5	61.7	.024	0	.001	.39	91.9	84.8	88.4	10.7	127	83	95	107	129	151	205	249	310	349	392	1.0	1.8		
12 578	1	60.4	.005	0	.001	.45	94.8	87.2	91.0	10.6	127	90	104	115	131	150	201	245	307	350	381	1.0	1.0		
12 579	4	61.0	.020	1	-	.53	95.0	88.9	92.0	11.1	124	82	103	103	122	150	213	253	318	367	398	1.0	1.5		
12 580	4	58.1	.014	2	.001	.13	93.9	85.1	89.5	11.3	133	88	99	119	154	188	230	265	312	347	380	.9	3.1		
13 581	6	62.0	.026	-	-	.00	90.1	82.0	86.1	10.0	136	90	111	124	150	177	223	268	341	374	409	1.2	1.9		



TABLE 5. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

THIRD-GRADE GASOLINE--CONTINUED

DISTRICT AND ITEM NUMBERS	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	TEMPERATURE, F (CORRECTED TO 760 MM HG)										DISTILLATION, ASTM D86		RES % LOSS		
							RES, ASTM D2699	MOT., ASTM D2700			R+M --	PERCENT EVAPORATED										95		EP	
												IBP	5	10	20	30	50	70	90	95					
13 582	1	57.5	-	-	-	.01	91.9	83.5	87.7	-	-	84	98	107	127	149	193	244	324	369	407	-	-	-	
13 583	11	63.8	.023	-	-	1.44	91.5	85.1	88.3	12.0	120	92	112	127	151	177	221	267	337	373	416	1.0	2.0	1.0	
13 584	1	57.2	-	-	-	.24	94.7	84.6	89.7	9.8	137	95	119	140	171	197	243	285	342	369	427	1.0	1.4	1.0	
13 585	7	54.6	.050	3	-	.01	91.9	83.1	87.5	8.0	153	91	106	117	141	167	207	236	287	334	396	1.0	1.5	1.0	
13 586	4	65.8	-	-	-	.45	93.2	86.5	89.9	9.9	132	95	106	117	141	167	207	236	287	334	396	1.0	1.5	1.0	
13 587	4	60.7	.077	1	-	1.85	92.8	85.4	89.1	10.9	127	85	96	109	132	157	208	261	337	378	428	1.0	3.0	1.0	
14 588	3	68.0	-	0	-	.00	91.0	82.9	87.0	11.8	123	82	101	112	133	156	199	231	282	312	364	1.3	1.7	1.0	
14 589	4	63.2	.040	-	-	1.86	91.9	85.4	88.7	12.2	120	86	98	108	129	151	197	249	323	361	403	1.2	2.9	1.0	
14 590	4	69.6	.012	1	-	.01	91.4	87.8	89.6	7.6	151	100	123	137	163	187	214	231	275	334	387	1.1	1.5	1.0	
15 591	2	67.3	.010	2	-	3.70	90.9	86.9	88.9	10.3	126	94	110	117	133	147	185	235	295	320	351	1.0	1.0	1.0	
15 592	1	68.4	.010	0	-	.52	93.1	86.4	90.8	11.1	124	88	104	113	130	149	194	234	311	342	386	1.0	1.0	1.0	
15 593	4	58.3	.012	1	-	.01	92.0	83.2	87.6	7.7	146	98	119	131	150	167	209	257	317	346	399	1.1	1.2	1.0	
15 594	1	62.2	.010	1	-	.49	93.2	85.1	89.2	9.4	138	93	113	125	146	168	217	262	322	345	392	1.0	1.0	1.0	
16 595	1	58.0	-	-	-	.00	91.9	84.2	88.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16 596	3	59.3	.025	-	-	1.40	92.1	85.2	88.7	10.2	132	88	105	119	142	165	209	253	312	346	394	1.2	1.6	1.0	
16 597	3	63.4	-	-	-	.64	94.1	86.4	90.3	10.7	126	85	104	115	134	152	193	237	297	331	398	1.1	1.4	1.0	
16 598	4	57.5	.028	1	-	.55	94.7	85.0	89.9	8.2	150	97	118	132	162	184	234	286	343	368	404	1.1	1.2	1.0	
16 599	5	58.4	.009	1	-	.01	91.9	82.7	87.3	8.0	144	99	118	130	148	166	209	254	317	341	392	1.0	1.0	1.0	
17 600	5	59.3	.008	1	-	.03	92.2	84.9	88.6	9.0	142	92	113	129	154	181	229	265	320	340	391	1.1	1.4	1.0	
17 601	3	57.1	.086	3	-	.37	90.9	82.7	86.8	11.5	128	87	100	117	143	167	220	278	342	379	418	1.3	2.3	1.0	
17 602	1	65.4	-	-	-	.33	95.9	87.8	91.9	11.0	128	91	-	121	142	-	202	-	289	-	378	-	378	1.0	2.0
17 603	2	56.5	.110	1	-	.31	94.9	84.9	89.9	10.4	-	88	-	116	-	-	222	-	343	-	403	-	403	1.0	1.0
17 604	8	61.0	.060	3	-	.08	92.6	82.7	87.7	8.8	138	95	115	124	141	164	201	252	322	338	395	1.1	1.5	1.0	
17 605	4	54.9	.010	1	-	.01	91.3	82.8	87.1	7.6	153	93	120	137	163	189	229	260	302	323	374	1.1	1.7	1.0	
AVERAGE		61.3	.028	1	-	.48	92.9	85.0	89.0	11.0	128	86	101	113	136	160	209	258	322	353	400	1.0	1.7	1.0	
SAMPLES	380																								

TABLE 5. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
DATA FOR SOME ADDITIONAL GRADES--CONTINUED

## INTERMEDIATE-GRADE GASOLINE

DISTRICT AND ITEM NUMBERS	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86																RES LOSS % %	
							RES, ASTM D2699	MOT, ASTM D2700			R+M --	TEMPERATURE, F (CORRECTED TO 760 MM HG)																
												PERCENT EVAPORATED																
												IBP	5	10	20	30	50	70	90	95	EP							
1 606	1	56.9	-	-	-	0.30	96.0	87.2	91.6	-	-	80	89	98	116	136	192	244	303	330	378	-	-	-	-	-	-	-
1 607	3	62.8	-	-	-	.36	96.5	86.8	91.7	13.1	114	85	101	113	132	152	214	291	338	361	423	0.8	2.2	-	-	-	-	-
2 608	1	56.9	0.010	0	0.001	.01	91.9	83.4	87.7	9.8	132	85	101	113	132	152	214	291	338	361	423	1.0	2.0	-	-	-	-	-
2 609	15	63.9	.018	2	.002	.38	96.2	87.4	91.8	14.1	109	77	85	94	111	129	185	236	304	333	373	.8	2.7	-	-	-	-	-
2 610	10	62.6	.016	1	.004	.44	96.5	87.3	91.9	12.3	118	82	92	102	120	141	196	243	306	334	385	.8	1.8	-	-	-	-	-
2 611	1	62.1	-	-	-	.47	96.6	87.0	91.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 612	1	62.8	.039	2	.002	2.13	97.3	89.4	93.4	12.3	119	84	87	103	124	146	202	262	346	378	414	1.0	4.0	-	-	-	-	-
2 613	1	58.5	.020	1	.001	.35	94.0	83.5	88.8	10.5	135	85	105	120	149	209	233	273	314	333	369	1.0	2.0	-	-	-	-	-
3 614	3	62.7	.039	-	-	2.10	95.5	87.7	91.6	12.7	119	83	96	107	128	153	205	267	338	372	420	1.1	.9	-	-	-	-	-
3 615	9	59.6	.017	-	-	.44	96.5	87.5	92.0	12.3	118	82	93	102	120	141	197	242	295	325	378	1.0	1.2	-	-	-	-	-
3 616	9	61.5	.014	-	-	.44	96.7	86.9	91.8	11.4	124	85	98	109	128	149	200	249	315	346	399	.9	1.1	-	-	-	-	-
4 617	10	62.5	.020	1	.017	.48	96.3	87.9	92.1	13.9	115	80	89	100	121	147	209	252	314	350	397	.8	1.8	-	-	-	-	-
4 618	10	64.4	.014	4	.010	.39	96.2	87.3	91.8	12.8	117	83	94	104	122	143	192	235	293	321	376	1.0	1.7	-	-	-	-	-
5 619	4	65.5	.009	2	.010	.58	96.3	87.9	92.1	11.8	122	85	98	111	129	151	195	231	287	317	383	.7	1.1	-	-	-	-	-
6 620	1	62.5	.020	2	.001	.00	92.9	84.2	88.6	11.7	124	88	104	114	131	154	202	246	307	328	380	1.0	1.0	-	-	-	-	-
6 621	3	65.6	.012	0	.001	.43	96.4	88.1	92.3	12.7	116	83	96	107	121	140	187	229	277	306	357	.9	2.7	-	-	-	-	-
6 622	2	68.2	.006	1	.001	.41	94.4	90.8	92.6	12.9	122	82	97	114	140	174	210	233	278	344	389	1.3	3.3	-	-	-	-	-
6 623	1	59.6	.010	1	.001	.64	94.1	86.7	90.4	10.6	134	90	114	132	159	176	211	245	298	326	378	1.0	1.0	-	-	-	-	-
7 624	1	61.8	.017	3	.002	.03	92.0	84.4	88.2	11.3	131	88	114	128	148	171	217	256	319	357	382	1.5	1.0	-	-	-	-	-
7 625	3	59.8	.017	-	-	.43	96.8	87.8	92.3	15.2	113	78	88	98	119	152	222	258	333	380	398	1.0	1.0	-	-	-	-	-
7 626	3	59.2	.009	2	.002	.04	91.5	83.7	87.6	10.4	132	84	106	119	141	166	219	267	335	367	401	1.2	2.2	-	-	-	-	-







TABLE 6. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
ANALYSES OF LOW-LEAD CONTENT GASOLINE

DISTRICT	GRADE	SALES PLACES	GR. D287 API	SULF. ASTM D1266 WT %	GUM, ASTM D361 MG	PHOS. ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											RES LOSS % X			
								RES, ASTM D2699	MOT, ASTM D2700			R+M -- 2	TEMPERATURE, F (CORRECTED TO 760 MM HG)													
													PERCENT EVAPORATED													
													IBP	5	10	20	30	50	70	90	95	EP				
1	THIRD GRADE	1	66.7	-	-	-	.42	95.4	87.6	91.5	15.0	106	75	-	90	107	-	187	-	335	-	387	1.0	4.0		
1	THIRD GRADE	2	58.5	-	-	-	.33	91.6	83.3	87.5	12.6	122	80	-	97	127	-	235	-	360	-	419	1.0	3.0		
1	THIRD GRADE	1	62.2	-	-	-	.48	96.4	87.5	92.0	12.3	119	80	-	104	122	-	198	-	312	-	382	1.0	2.0		
1	THIRD GRADE	4	61.9	.010	1	-	.38	94.3	88.1	91.2	12.7	119	83	88	101	121	145	218	271	315	343	402	1.0	1.8		
1	INTERMEDIATE	1	56.9	-	-	-	.30	96.0	87.2	91.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1	INTERMEDIATE	3	62.8	-	-	-	.36	96.5	86.8	91.7	13.1	114	80	89	98	116	136	192	244	303	330	378	.8	2.2		
2	THIRD GRADE	3	57.1	.013	1	.002	.24	96.6	86.1	91.4	10.8	129	93	103	113	133	158	221	272	335	357	403	1.3	1.8		
2	THIRD GRADE	1	58.1	.002	1	.002	.19	91.8	84.0	87.9	10.2	127	88	98	110	126	154	198	284	337	356	422	1.0	2.0		
2	THIRD GRADE	5	60.3	.042	0	.000	.41	91.6	83.4	87.5	11.3	126	86	97	108	130	154	217	283	346	377	416	1.3	1.5		
2	THIRD GRADE	1	61.5	.010	0	.003	.36	96.6	87.0	91.8	12.1	117	94	95	103	117	134	195	240	297	324	380	.8	2.2		
2	THIRD GRADE	3	61.1	.022	1	-	.29	94.1	87.5	90.8	12.1	120	76	88	99	119	145	213	259	318	373	402	1.0	1.5		
2	THIRD GRADE	4	59.6	.018	-	-	.32	93.8	84.5	89.2	10.3	133	94	107	119	143	169	216	255	312	339	392	1.3	1.2		
2	REGULAR	1	58.7	.025	3	.000	.39	94.2	84.2	89.2	9.5	138	84	94	116	146	176	230	271	311	331	388	1.0	3.0		
2	INTERMEDIATE	15	63.9	.018	2	.002	.38	96.2	87.4	91.8	14.1	109	77	85	94	111	129	185	236	304	333	373	.8	2.7		
2	INTERMEDIATE	9	62.4	.016	0	.007	.42	96.5	87.3	91.9	12.1	119	83	94	103	121	143	199	244	305	333	383	.8	1.7		
2	INTERMEDIATE	1	62.1	-	-	-	.47	96.6	87.0	91.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2	INTERMEDIATE	1	58.5	.020	1	.001	.35	94.0	83.5	88.8	10.5	135	85	105	120	149	209	233	273	314	333	369	1.0	2.0		
3	THIRD GRADE	4	61.6	.024	-	-	.28	91.9	84.5	88.2	11.5	125	84	97	108	131	158	213	276	354	375	400	1.0	1.0		
3	THIRD GRADE	1	61.3	-	-	-	.49	96.4	88.0	92.2	10.6	127	90	-	116	132	-	200	-	308	-	376	1.0	3.0		
3	THIRD GRADE	1	59.6	-	-	-	.45	94.4	86.7	90.6	9.6	131	80	93	103	125	148	218	263	301	332	388	.6	1.4		
3	THIRD GRADE	3	58.9	-	-	-	.10	92.8	82.8	87.8	8.8	139	88	109	124	146	168	212	256	331	367	424	.9	1.6		
3	THIRD GRADE	5	58.5	.024	-	-	.23	94.4	85.6	90.0	11.9	126	82	96	108	138	171	228	269	313	339	385	1.2	.8		
3	REGULAR	1	67.0	.010	1	.002	.46	95.1	87.4	91.3	12.9	118	79	98	108	130	154	198	230	290	320	360	1.0	1.0		
3	INTERMEDIATE	8	59.6	.017	-	-	.41	96.6	87.5	92.1	12.0	119	83	93	103	120	138	192	240	295	319	372	1.1	1.0		
3	INTERMEDIATE	8	61.4	.014	-	-	.43	96.7	86.9	91.8	11.4	124	85	98	109	128	149	200	249	315	346	399	.9	1.1		
4	THIRD GRADE	4	60.6	.027	2	.017	.30	91.6	83.5	87.6	11.7	122	83	94	106	126	152	205	264	331	359	395	.9	1.1		
4	THIRD GRADE	1	63.0	.079	2	.006	.43	94.0	87.2	90.6	10.6	133	94	101	122	152	180	218	248	330	376	430	1.0	2.0		
4	THIRD GRADE	5	60.1	.016	1	.013	.35	93.5	85.1	89.3	11.8	125	81	96	108	134	164	220	263	325	347	388	.7	1.3		
4	REGULAR	1	62.9	.034	2	.006	.09	94.3	87.3	90.8	13.0	114	82	89	101	122	141	185	245	321	351	422	.3	2.7		
4	REGULAR	3	60.5	.018	1	.030	.41	94.1	85.4	89.8	14.2	117	78	91	107	132	159	215	267	338	368	403	1.0	2.2		
4	INTERMEDIATE	7	62.7	.015	1	.017	.41	96.3	87.9	92.1	13.8	114	79	87	99	120	145	206	249	308	338	389	.7	1.9		
4	INTERMEDIATE	9	64.7	.014	4	.010	.37	96.2	87.3	91.8	12.8	117	83	94	104	122	143	192	235	293	321	376	1.0	1.7		
4	PREMIUM	1	54.8	-	-	-	.08	100.9	90.3	95.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

TABLE 6. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
ANALYSES OF LOW-LEAD CONTENT GASOLINE--CONTINUED

DISTRICT	GRADE	SAMP- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER		RVF, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86										RES % LOSS %	
								RES, ASTM D2699	MOT, ASTM D2700			R+M ---	TEMPERATURE, F (CORRECTED TO 760 MM HG)										
													PERCENT EVAPORATED										
													1BP	5	10	20	30	50	70	90	95		EP
5	THIRD GRADE	3	59.2	.027	-	-	.30	91.2	83.0	87.1	7.8	147	92	111	127	154	177	219	273	326	357	404	.7 1.3
5	THIRD GRADE	2	61.6	.038	1	.000	.38	91.7	84.0	87.9	13.9	120	76	97	112	140	173	225	282	375	400	415	.5 1.0
5	THIRD GRADE	3	66.2	.076	2	.009	.44	94.0	87.7	90.9	11.7	127	86	101	118	147	178	214	241	325	369	425	1.3 1.7
5	REGULAR	1	63.1	.020	1	.000	.50	93.0	84.8	88.9	14.9	110	73	81	95	115	142	201	255	334	374	423	1.0 2.5
5	REGULAR	1	67.5	.070	0	.004	.44	95.2	88.1	91.7	12.0	124	79	92	110	141	175	212	236	323	372	434	.6 1.9
5	INTERMEDIATE	3	66.2	.009	2	.010	.38	96.2	87.7	92.0	11.8	122	85	98	111	129	151	195	231	287	317	383	.7 1.1
6	THIRD GRADE	2	69.2	.020	-	-	.22	94.2	89.8	92.0	-	-	-	-	-	-	-	-	-	-	-	-	-
6	INTERMEDIATE	3	65.6	.012	0	.001	.43	96.4	88.1	92.3	12.7	116	83	96	107	121	140	187	229	277	306	357	.9 2.7
6	INTERMEDIATE	2	68.2	.006	1	.001	.41	94.4	90.8	92.6	12.9	122	82	97	114	140	174	210	233	278	344	389	1.3 3.3
7	THIRD GRADE	3	62.1	.010	-	-	.47	91.0	84.2	87.6	-	-	-	-	-	-	-	-	-	-	-	-	-
7	THIRD GRADE	3	67.6	.065	-	-	.40	94.8	88.5	91.7	11.9	124	86	96	109	139	172	210	237	307	351	410	1.3 1.7
7	THIRD GRADE	2	60.9	.012	-	-	.27	93.5	85.6	89.6	11.2	127	83	94	106	133	161	219	268	313	331	364	1.1 .9
7	INTERMEDIATE	3	59.8	.017	-	-	.43	96.8	87.8	92.3	15.2	113	78	88	98	119	152	222	258	333	380	398	1.0 1.0
7	INTERMEDIATE	10	67.0	.012	0	.002	.33	96.0	87.5	91.8	13.0	115	82	96	105	122	143	187	223	282	318	354	1.0 1.6
7	INTERMEDIATE	1	59.5	.003	0	.002	.42	94.1	87.0	90.6	10.4	134	88	102	117	146	179	232	265	309	340	362	1.0 2.0
8	THIRD GRADE	5	61.0	.036	-	-	.25	91.1	84.2	87.7	11.2	125	83	-	106	129	-	213	-	342	-	409	1.0 3.0
8	THIRD GRADE	1	61.7	-	-	-	.50	96.5	87.0	91.8	10.9	125	70	-	107	127	-	203	-	315	-	387	1.0 2.0
8	THIRD GRADE	1	62.1	-	-	-	.47	92.2	85.6	88.9	11.5	123	82	-	107	129	-	201	-	346	-	444	1.0 3.0
8	THIRD GRADE	5	59.0	.018	-	-	.20	93.9	85.0	89.5	12.2	128	89	100	116	146	182	229	263	314	332	388	.9 1.6
8	REGULAR	1	57.0	-	-	-	.48	94.0	85.2	89.6	10.3	130	86	100	112	134	158	211	268	331	369	404	.6 .9
8	INTERMEDIATE	9	61.7	.020	-	-	.41	96.2	87.6	91.9	12.2	120	84	96	106	124	146	198	241	300	331	385	.7 1.1
8	INTERMEDIATE	6	62.0	.018	-	-	.36	96.5	86.8	91.7	12.2	119	82	93	103	123	146	199	243	312	341	390	1.0 1.8
9	INTERMEDIATE	2	66.0	.015	-	-	.40	95.9	87.2	91.6	12.8	115	82	93	103	121	141	187	232	300	343	396	1.0 1.5
10	THIRD GRADE	2	60.3	-	-	-	.25	92.0	83.8	87.9	-	-	-	-	-	-	-	-	-	-	-	-	-
10	THIRD GRADE	3	65.6	.019	-	-	.36	92.4	89.4	90.9	13.0	119	86	92	102	132	165	211	235	266	322	390	.9 2.1
10	INTERMEDIATE	3	64.2	-	-	-	.36	96.4	87.4	91.9	12.4	118	82	94	103	122	146	193	231	292	328	390	1.1 1.4
11	THIRD GRADE	2	63.1	-	-	-	.35	91.3	84.3	87.8	11.2	124	84	96	110	129	148	200	250	318	352	398	1.2 .8
11	THIRD GRADE	3	60.5	-	-	-	.38	94.2	87.6	90.9	11.2	128	86	98	110	137	168	222	263	301	332	392	1.2 .8
11	THIRD GRADE	5	62.4	.013	-	-	.33	93.4	85.9	89.7	11.4	129	86	100	114	142	170	218	250	298	324	375	1.1 .9
11	INTERMEDIATE	3	64.1	-	-	-	.34	95.3	87.4	91.4	12.5	121	80	93	108	131	157	212	277	317	343	392	1.0 1.0
11	INTERMEDIATE	3	61.5	-	-	-	.34	96.4	87.1	91.8	11.5	118	82	94	103	119	134	179	241	285	319	378	1.1 .9



TABLE 6. -- MOTOR GASOLINE SURVEY, WINTER 1973-74  
ANALYSES OF LOW-LEAD CONTENT GASOLINE--CONTINUED

DISTRICT	GRADE	SAM- PLS	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUN, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER				RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES LOSS % X
								RES, ASTM D2699	MOT, ASTM D2700	RVM ---	TEMPERATURE, F (CORRECTED TO 760 MM HG)															
											PERCENT EVAPORATED															
											IBP			5	10	20	30	50	70	90	95	EP				
12	THIRD GRADE	1	65.9	.015	0	.001	.45	94.6	87.4	91.0	11.0	122	83	97	108	124	141	185	223	259	283	337	1.0	1.0		
12	THIRD GRADE	3	60.6	.024	-	-	.30	91.9	84.9	88.4	10.9	125	80	92	101	124	146	209	264	327	364	402	.9	1.6		
12	THIRD GRADE	1	60.4	.005	0	.001	.45	94.8	87.2	91.0	10.6	127	90	104	115	131	150	201	245	307	350	381	1.0	1.0		
12	THIRD GRADE	2	62.0	.020	1	-	.34	94.2	88.4	91.3	12.0	116	78	-	90	106	134	214	-	312	-	382	1.0	2.0		
12	THIRD GRADE	4	58.1	.014	2	.001	.13	93.9	85.1	89.5	11.3	133	88	99	119	154	188	230	265	312	347	380	.9	3.1		
12	INTERMEDIATE	6	63.4	.021	-	-	.41	95.4	87.4	91.4	12.1	119	83	96	107	125	144	191	236	293	318	364	1.0	1.3		
12	INTERMEDIATE	3	61.0	-	-	-	.42	96.1	87.3	91.7	12.9	116	86	98	106	120	139	196	250	312	345	383	1.0	1.0		
13	THIRD GRADE	1	57.2	-	-	-	.24	94.7	84.6	89.7	9.8	137	92	112	127	151	177	221	267	337	373	416	1.2	1.3		
13	THIRD GRADE	2	63.2	-	-	-	.38	93.2	85.0	89.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	REGULAR	1	58.8	.030	7	.000	.41	91.1	84.5	87.8	7.1	152	88	114	131	156	179	223	266	328	352	406	1.0	1.0		
13	REGULAR	1	59.6	.023	-	.000	.39	93.7	84.8	89.3	11.6	123	93	104	114	130	147	194	256	332	368	412	1.1	1.4		
13	INTERMEDIATE	5	65.9	.020	5	.000	.36	94.6	86.5	90.6	8.8	137	88	107	119	138	159	199	230	283	318	411	.9	1.3		
13	PREMIUM	1	65.6	-	-	-	.37	95.6	89.5	92.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
14	INTERMEDIATE	8	66.6	.012	1	.001	.42	95.7	87.0	91.4	10.6	127	84	102	113	134	155	195	225	287	327	377	1.7	2.0		
15	THIRD GRADE	1	62.2	.010	1	.001	.49	93.2	85.1	89.2	9.4	138	93	113	125	146	168	217	262	322	345	392	1.0	1.0		
15	INTERMEDIATE	3	66.9	.020	1	.000	.41	95.8	86.9	91.4	11.3	125	88	104	116	136	159	199	230	288	325	380	1.0	3.0		
16	THIRD GRADE	1	63.4	-	-	-	.50	94.0	86.1	90.1	10.7	126	85	104	115	134	152	193	237	297	331	398	1.1	1.4		
16	THIRD GRADE	1	63.0	-	-	-	.29	94.0	85.1	89.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
16	REGULAR	4	63.0	.010	1	.001	.45	93.2	85.5	89.4	11.7	121	83	92	108	127	147	191	235	312	345	394	1.0	3.3		
16	REGULAR	2	60.4	-	-	-	.44	92.1	85.5	88.8	11.0	125	90	103	115	135	155	195	233	285	309	354	.7	2.3		
16	INTERMEDIATE	3	60.9	.030	1	.000	.45	96.3	87.2	91.8	10.4	133	92	111	123	147	169	212	253	323	351	391	1.0	2.0		
16	INTERMEDIATE	4	63.5	.016	-	.000	.35	96.2	86.7	91.5	11.3	124	89	103	116	135	155	193	227	290	329	372	1.1	1.9		
17	THIRD GRADE	3	57.1	.086	3	.000	.37	90.9	82.7	86.8	11.5	128	87	100	117	143	167	220	278	342	379	418	1.3	2.3		
17	THIRD GRADE	1	65.4	-	-	-	.33	95.9	87.8	91.9	11.0	128	91	-	121	142	-	202	-	289	-	378	1.0	2.0		
17	THIRD GRADE	2	56.5	.110	1	-	.31	94.9	84.9	89.9	10.4	-	88	-	116	-	222	-	343	-	403	1.0	1.0			
17	THIRD GRADE	1	62.3	-	-	-	.48	96.2	83.7	90.0	10.3	125	98	-	115	130	-	181	-	345	-	415	1.0	2.0		
17	REGULAR	2	59.9	-	-	-	.45	91.0	83.5	87.3	11.8	124	82	97	111	137	161	208	256	326	368	418	1.0	3.5		
17	REGULAR	2	58.5	.070	1	.000	.32	95.2	85.0	90.1	10.7	132	87	105	120	144	167	220	275	344	374	424	1.2	2.1		
17	REGULAR	5	61.8	.061	2	.000	.39	93.7	84.5	89.1	11.4	124	87	100	112	129	150	198	243	312	342	380	1.0	2.2		
17	REGULAR	3	57.1	-	-	-	.43	94.5	85.3	89.9	9.6	132	86	101	113	135	156	205	262	326	344	384	.8	2.2		
17	REGULAR	3	59.7	.022	-	-	.47	93.6	85.7	89.7	10.6	127	87	101	115	132	149	197	255	333	382	415	1.3	1.5		
17	INTERMEDIATE	2	62.3	-	-	-	.50	96.4	86.9	91.7	11.2	125	84	98	112	133	156	202	244	302	355	376	1.1	2.4		
17	INTERMEDIATE	1	58.2	.071	-	-	.19	95.3	85.4	90.4	9.3	138	86	108	124	149	174	216	258	330	366	422	1.2	.8		

TABLE 7. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
ANALYSES OF UNLEADED GASOLINE

DISTRICT	GRADE	SAMP- PLES	GR., ASTM D287 API	SULF, ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86											RES %	LOSS %
								RES, ASTM D2699	MOT., ASTM D2700	RM, ---			TEMPERATURE, °F (CORRECTED TO 760 MM HG)												
													PERCENT EVAPORATED												
													1BP	5	10	20	30	50	70	90	95	EP			
1	THIRD GRADE	3	61.4	-	-	-	0.03	94.6	83.1	88.9	12.6	121	83	95	107	130	154	210	265	334	373	395	0.8	2.2	
1	THIRD GRADE	1	58.7	-	-	-	.01	91.9	84.7	88.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	PREMIUM	3	53.8	-	-	-	.02	100.9	90.1	95.5	12.8	119	82	94	102	122	147	217	258	308	333	392	.6	.9	
2	THIRD GRADE	7	59.6	0.056	1	0.002	.02	94.7	83.5	89.1	11.6	123	85	94	106	128	151	206	269	336	364	408	1.0	2.7	
2	THIRD GRADE	4	57.5	.017	1	.000	.02	92.1	83.9	88.0	9.6	134	91	105	117	134	154	214	289	342	367	423	1.0	2.0	
2	THIRD GRADE	3	55.3	.010	1	.000	.01	94.8	85.3	90.1	14.1	117	81	88	97	125	161	231	285	339	371	428	1.0	4.5	
2	REGULAR	1	61.5	.074	1	.000	.00	95.0	82.8	88.9	11.8	123	84	88	109	132	154	208	267	335	360	400	1.0	4.0	
2	REGULAR	2	56.7	.012	2	.000	.00	94.5	86.0	90.3	14.1	118	80	84	103	128	159	226	277	358	398	428	1.0	5.0	
2	INTERMEDIATE	1	56.9	.010	0	.001	.01	91.9	83.4	87.7	9.8	132	85	101	113	132	152	214	291	338	361	423	1.0	2.0	
2	PREMIUM	12	54.6	.014	0	.000	.02	101.0	90.3	95.7	12.8	121	81	92	103	124	153	228	262	323	347	396	.9	2.3	
3	THIRD GRADE	10	58.6	.018	-	-	.03	94.8	83.7	89.3	11.5	122	84	97	107	128	149	196	269	336	360	400	1.0	1.4	
3	THIRD GRADE	3	64.0	.037	-	-	.02	92.0	84.2	88.1	11.7	125	84	96	107	136	170	214	252	324	372	414	1.2	1.3	
3	THIRD GRADE	7	59.1	.024	-	-	.03	92.1	82.6	87.5	8.6	142	94	112	125	149	169	215	260	334	364	427	1.0	1.9	
3	THIRD GRADE	1	64.7	.010	8	.001	.01	91.9	83.2	87.6	12.8	121	82	98	110	133	160	214	250	310	335	367	1.5	2.0	
3	PREMIUM	10	53.7	.014	-	-	.02	101.4	90.8	96.1	12.1	125	84	94	106	132	163	234	267	330	349	384	1.0	1.5	
4	THIRD GRADE	2	57.4	.026	4	.008	.02	94.3	83.4	88.9	9.6	132	85	100	114	136	156	202	276	338	360	406	.3	2.7	
4	THIRD GRADE	4	57.9	.006	-	-	.01	91.8	83.7	87.8	12.2	118	84	99	108	125	136	184	276	334	369	408	1.0	1.0	
4	THIRD GRADE	1	61.1	.011	2	-	.02	92.4	82.9	87.4	12.1	123	85	102	112	131	152	208	263	325	356	408	1.0	1.7	
4	THIRD GRADE	1	66.1	-	-	-	.01	92.4	84.0	88.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	THIRD GRADE	7	60.0	.017	1	.026	.03	91.7	82.8	87.3	11.2	124	83	95	106	126	151	208	260	325	366	410	.8	1.4	
4	THIRD GRADE	4	56.0	.018	1	.042	.01	93.5	84.8	89.2	11.6	125	80	95	108	132	159	213	269	329	360	410	.8	1.5	
4	THIRD GRADE	12	61.7	.012	1	.045	.02	91.9	84.1	88.0	11.0	127	84	100	112	133	156	206	262	328	355	408	1.0	1.3	
4	THIRD GRADE	3	59.9	.023	-	-	.01	92.8	82.2	87.5	11.1	125	86	102	112	132	150	197	273	344	376	418	1.0	1.0	
4	PREMIUM	7	53.8	.012	1	.000	.03	100.9	90.4	95.7	11.7	126	82	96	106	129	161	234	268	330	352	392	1.0	1.7	
5	THIRD GRADE	6	62.0	.017	2	.003	.01	91.8	83.7	87.8	11.1	126	83	98	111	133	159	207	247	307	334	383	.8	1.2	
5	THIRD GRADE	3	58.7	.056	-	-	.04	91.7	82.3	87.0	8.1	147	92	111	127	154	178	228	274	345	375	424	1.0	1.0	
5	THIRD GRADE	1	64.9	.016	1	.004	.02	92.2	85.2	88.7	11.0	129	84	102	116	142	171	214	244	316	350	406	.9	1.1	
5	THIRD GRADE	6	61.2	.035	1	.015	.02	92.2	82.4	87.3	12.7	120	81	93	105	127	153	212	270	359	393	427	1.0	1.9	
5	THIRD GRADE	5	61.2	.015	1	.070	.02	91.9	83.5	87.7	11.6	124	85	99	111	133	156	207	257	324	353	408	1.0	1.3	



TABLE 7. - MOTOR GASOLINE SURVEY, WINTER 1973-74  
ANALYSES OF UNLEADED GASOLINE--CONTINUED

DISTRICT	GRADE	SAM- PLES	GR., ASTM D287 API	SULF., ASTM D1266 WT %	GUM, ASTM D381 MG	PHOS., ASTM D3231 G/GAL	LEAD, ASTM D526 G/GAL	OCTANE NUMBER			RVP, ASTM D323 LB	20V/L ASTM D439 F	DISTILLATION, ASTM D86												RES LOSS %	RES LOSS %
								RES, ASTM D2699	MOT., ASTM D2700	R+M ---			TEMPERATURE, F (CORRECTED TO 760 MM HG)													
													PERCENT EVAPORATED													
													IBP	5	10	20	30	50	70	90	95	EP				
6	THIRD GRADE	2	60.7	.029	-	-	.03	91.9	83.4	87.7	10.8	129	84	103	116	138	160	210	252	309	340	380	1.0	1.0		
6	THIRD GRADE	1	58.4	-	-	-	.06	90.9	83.4	87.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
6	REGULAR	1	57.0	.026	1	.001	.00	92.4	83.0	87.7	9.0	140	92	102	122	146	171	221	266	342	373	430	1.0	2.0		
6	INTERMEDIATE	1	62.5	.020	2	.001	.00	92.9	84.2	88.6	11.7	124	88	104	114	131	154	202	246	307	328	380	1.0	1.0		
7	THIRD GRADE	5	63.1	.034	-	-	.01	91.5	83.1	87.3	10.3	128	88	99	110	132	158	202	245	306	332	384	1.0	1.0		
7	THIRD GRADE	6	57.0	.013	-	-	.04	91.5	82.6	87.1	9.6	137	90	107	121	143	166	222	274	329	362	410	.8	1.0		
7	THIRD GRADE	2	59.0	.009	-	-	.02	92.2	82.2	87.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7	INTERMEDIATE	1	61.8	.017	3	.002	.03	92.0	84.4	88.2	11.3	131	88	114	128	148	171	217	256	319	357	382	1.5	1.0		
7	INTERMEDIATE	3	59.2	.009	2	.002	.04	91.5	83.7	87.6	10.4	132	84	106	119	141	166	219	267	335	367	401	1.2	2.2		
8	THIRD GRADE	6	59.6	.026	-	-	.03	93.4	83.1	88.3	10.4	127	86	94	111	132	148	198	266	333	365	406	1.0	2.0		
8	THIRD GRADE	1	60.7	-	-	-	.05	90.8	82.7	86.8	9.6	133	90	-	121	138	-	203	-	345	-	429	1.0	1.5		
8	PREMIUM	10	54.9	.012	-	-	.02	101.3	90.5	95.9	12.3	121	83	91	102	121	149	228	266	332	359	395	.9	1.9		
9	THIRD GRADE	3	66.5	.013	-	-	.01	91.7	82.9	87.3	12.5	120	84	102	112	134	158	198	230	286	312	388	.6	.9		
10	THIRD GRADE	4	61.4	.052	-	-	.01	91.3	83.0	87.2	10.8	130	84	99	114	141	163	213	246	297	328	373	1.0	1.3		
11	THIRD GRADE	1	63.6	-	-	-	.01	92.4	84.0	88.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12	THIRD GRADE	1	62.8	-	-	-	.02	91.8	85.2	88.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12	THIRD GRADE	1	63.0	-	-	-	.04	92.1	84.9	88.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	THIRD GRADE	6	62.0	.026	-	-	.00	90.1	82.0	86.1	10.0	136	90	111	124	150	177	223	268	341	374	409	1.2	1.9		
13	THIRD GRADE	1	57.5	-	-	-	.01	91.9	83.5	87.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13	THIRD GRADE	7	54.6	.050	3	.000	.01	91.9	83.1	87.5	8.0	153	95	119	140	171	197	243	285	342	369	427	1.0	1.4		
14	THIRD GRADE	3	68.0	-	-	-	.00	91.0	82.9	87.0	11.8	123	82	101	112	133	156	199	231	282	312	364	1.3	1.7		
14	THIRD GRADE	4	69.6	.012	1	.000	.01	91.4	87.8	89.6	7.6	151	100	123	137	163	187	214	231	275	334	387	1.1	1.5		
15	THIRD GRADE	4	58.3	.012	1	.001	.01	92.0	83.2	87.6	7.7	146	98	119	131	150	167	209	257	317	346	399	1.1	1.2		
16	THIRD GRADE	1	58.0	-	-	-	.00	91.9	84.2	88.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
16	THIRD GRADE	5	58.4	.009	1	.001	.01	91.9	82.7	87.3	8.0	144	99	118	130	148	166	209	254	317	341	392	1.0	1.0		
17	THIRD GRADE	5	59.3	.008	1	.000	.03	92.2	84.9	88.6	9.0	142	92	113	129	154	181	229	265	320	340	391	1.1	1.4		
17	THIRD GRADE	7	60.9	.060	3	.000	.03	92.1	82.6	87.4	8.5	140	95	115	126	143	164	205	252	317	338	391	1.1	1.3		
17	THIRD GRADE	4	54.9	.010	1	.000	.01	91.3	82.8	87.1	7.6	153	93	120	137	163	189	229	260	302	323	374	1.1	.7		





TABLE 9. - Cumulative percents of samples of all grades by motor octane numbers by districts, motor-gasoline survey, winter 1973-74

Motor octane number	District																	Cumulative total samples
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
81																		2
82		0.2	1.1	1.3	1.8		2.2	0.3					0.4					38
83	3.3	1.8	3.2	3.8	5.1	2.7	4.5	1.8	2.9	2.1			1.1			1.1	2.7	133
84	4.9	4.9	5.0	8.1	7.8	4.4	7.1	3.6	8.7	6.7			2.8	2.1		3.3	6.8	330
85	6.5	9.5	9.5	13.1	15.0	4.4	16.0	5.5	35.6	29.0	1.5	0.9	13.9	8.0	3.1	12.2	12.7	802
											11.2	5.2	34.1	22.5	8.4	27.8	39.8	
86	19.5	26.7	22.3	32.6	31.8	27.4	35.4	20.4	48.1	43.0	35.5	19.3	45.5	41.9	33.6	45.0	52.5	1,569
87	42.3	45.5	50.8	53.3	58.9	42.5	51.1	45.9	50.0	49.2	46.3	42.0	52.7	50.9	48.1	52.2	55.2	2,336
88	50.4	54.3	55.3	58.6	62.5	50.4	56.7	55.3	50.0	50.8	53.3	54.7	55.2	52.6	52.7	56.1	57.0	2,584
89	54.5	56.5	56.3	59.6	63.1	53.1	57.8	55.6	51.0	51.8	53.7	58.0	61.3	57.1	54.2	56.7	57.9	2,680
90	56.9	60.1	59.0	61.6	64.6	54.9	58.2	58.7	51.9	53.4	54.4	59.9	66.8	60.9	56.5	57.2	70.1	2,822
91	69.1	71.7	70.6	70.7	75.7	61.9	69.4	68.4	58.7	59.6	61.0	64.2	75.0	77.5	80.9	81.1	89.6	3,350
92	90.2	92.7	91.2	94.7	88.9	85.0	89.9	93.3	76.0	87.6	82.2	81.6	90.8	95.5	96.2	99.4	98.6	4,257
93	99.2	99.6	100.0	100.0	97.0	98.2	98.9	99.7	92.3	97.4	93.8	97.2	99.3	99.3	100.0	100.0	100.0	4,618
94	100.0	100.0			97.3	100.0	100.0	100.0	97.1	99.5	98.1	100.0	100.0	100.0				4,660
95					100.0				98.1	100.0	98.8							4,673
96									99.0									4,675
97									100.0									4,676
98											100.0							4,678

TABLE 10. - Cumulative percents of samples of all grades by antiknock (octane) index (RON + MON)/2 by districts, motor-gasoline survey, winter 1973-74

Antiknock index	District																	Cumulative total samples
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
84													0.2					1
85													.4					2
86																		4
87	0.8	0.8	0.6	2.0	3.6	0.9	4.1	1.2	1.9	2.1			5.7	1.0	1.5	2.2	7.2	106
88	2.4	2.4	4.2	8.1	7.5	3.5	7.8	3.0	15.4	7.8		1.9	19.1	9.0	3.8	6.1	9.0	335
89	7.3	9.1	8.8	12.6	14.1	9.7	16.8	4.9	45.2	33.2	2.3	11.3	41.5	27.3	25.2	25.0	29.9	912
90	24.4	32.8	34.5	38.4	44.4	29.2	38.1	34.7	48.1	49.2	42.9	31.6	51.2	47.4	47.3	48.3	50.7	1,909
91	47.2	49.4	52.3	54.3	60.7	47.8	51.1	49.2	49.0	50.8	51.0	50.0	53.4	50.9	53.4	53.3	53.4	2,436
92	54.5	55.1	55.9	59.6	63.1	54.0	57.5	55.0	50.0	52.3	53.7	56.6	56.1	52.9	53.4	56.7	57.0	2,623
93	54.5	56.3	56.3	59.8	63.1	55.8	57.8	55.9	51.9	52.8	54.4	58.0	64.4	53.3	53.4	56.7	57.5	2,693
94	54.5	57.5	56.9	60.1	64.6	56.6	58.2	57.1	53.8	53.9	54.4	59.9	69.0	59.9	55.7	57.8	62.9	2,783
95	63.0	74.7	71.6	77.0	77.8	69.9	70.9	64.4	57.7	66.3	66.8	66.5	88.6	85.1	85.5	80.0	91.4	3,533
96	96.7	98.4	97.5	98.7	96.4	98.2	96.3	99.4	94.2	99.0	96.1	95.8	100.0	100.0	100.0	100.0	100.0	4,596
97	100.0	99.8	100.0	100.0	100.0	100.0	100.0	100.0	98.1	100.0	98.5	100.0						4,671
98		100.0							100.0		99.2							4,676
99											100.0							4,678







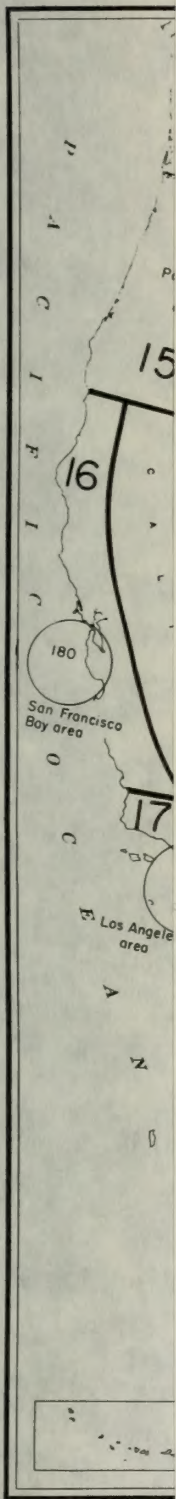


FIGURE 1 - Map of California showing the location of the study area. The study area is located in the San Francisco Bay area, which is highlighted in the inset map.



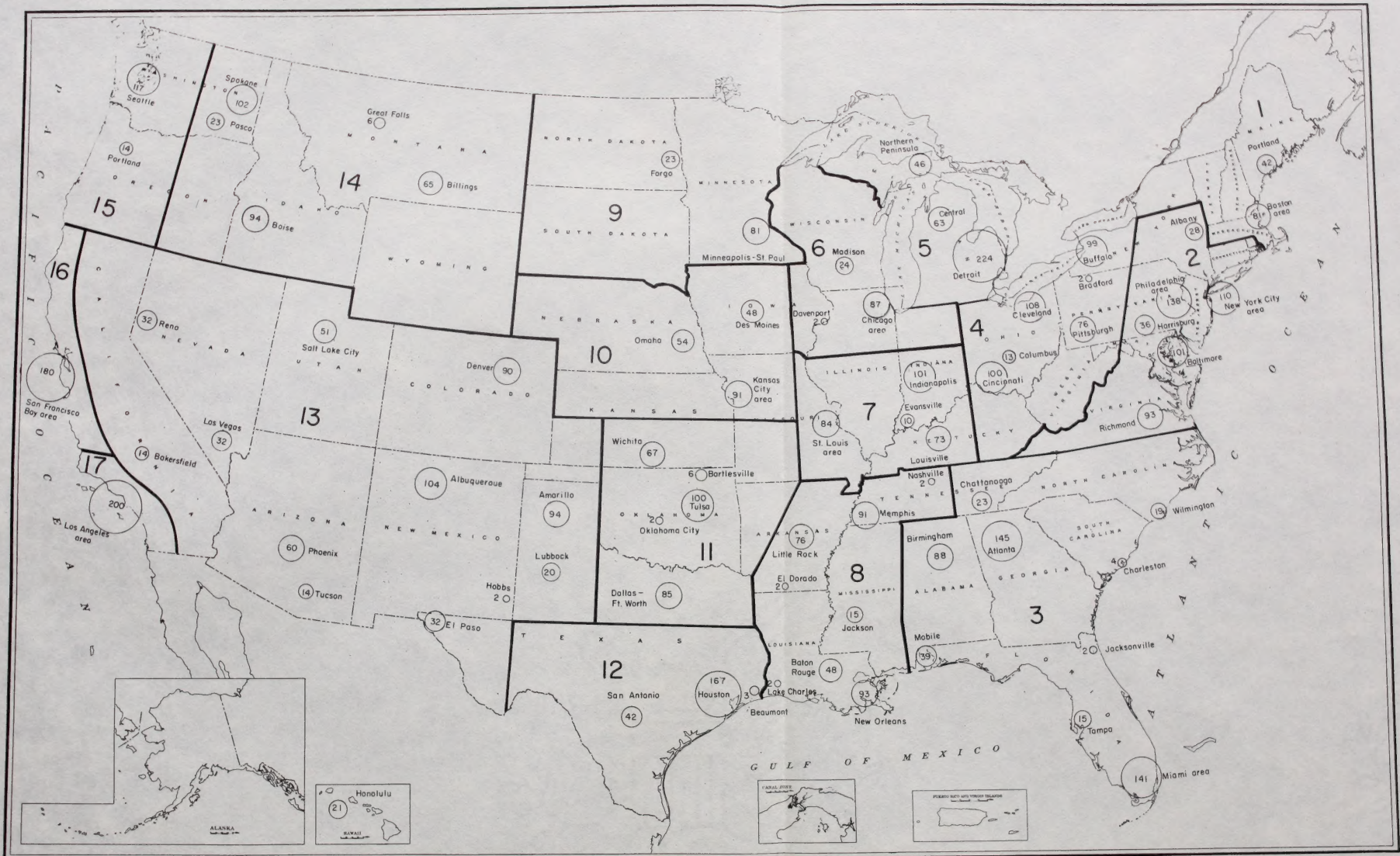


FIGURE 6.- Map Showing Location and Number of Samples for the National Motor Gasoline Survey, Winter 1973-74





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